THE EVOLVING CITY

Urban Design Proposals by Ulrich Franzen and Paul Rudolph

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Text by Peter Wolf

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FOREWORD

Even in approaching an art so complex as architecture, The Ford Foundation seeks to act in the artist's own terms. Urban design has come to a point at which it needs revitalization and new directions of approach, but these are not likely to appear without leadership. What is needed is the opportunity of a few men with talent and a new vision to turn vision into something tangible that can be seen by others, and with some provision for making the tangible products available to be seen. This was the purpose of the projects by Paul Rudolph and Ulrich Franzen that are represented in this book. They may never turn into actual building complexes, but the concern here is not so much the physical rebuilding of New York as it is the evolution of new forms in the concept of the city. These projects are a first step that appears to have a reasonable chance of impact.

W. McNeil Lowry
The Ford Foundation

AUTHOR'S PREFACE

This book is part of a most unusual enterprise. We call it a "duograph," a name which does not seem to exist in accepted English usage. Its purpose is to display two very large urban design projects which focus on Manhattan. One project is centered on the Upper East Side of the island between 59th and 96th Streets. Some will say that this is the one area in all of New York which least needs fundamental attention. The other focuses on the corridor of the once proposed and much discussed Lower Manhattan Expressway. People will no doubt be quick to point out that—though once very much there—this proposed highway corridor is no longer to be found on official maps of the city.

These ironies, which will escape few careful observers' attention, hardly matter. Franzen and Rudolph seize specific terrain as an aid to presentation, not as a unique locus of application. The projects are not indended to be costed-out feasibility studies to be implemented in the next Capital Budget, but may more accurately be seen as the orchestration of many ideas, some new and some reused, into relatively coherent urban design proposals developed by two very accomplished architects. Their intention when design work started over four years ago was, and remains today, to stimulate the imagination—to suggest evolutionary alternatives for cities. Each proposal is composed of ideas presented to be used, to be seminal in certain respects, certain places, and certain circumstances to make urban design more pertinent and urban life more enjoyable.

The enterprise is special in other ways, too. The design work has, of course, been done entirely by the architects and their assistants. However, in the hope that an outsider might be able to make the details of the projects somewhat clearer to a reader, I was asked to write the text contained in this duograph. In every respect, I have tried to portray each project in both mood and detail as each architect would himself. To this end, interviews were taped with each architect and the final text was reviewed by them. As a planner, critic and historian I am, of course, aware that both proposals are susceptible to a wide variety of serious and meaningful criticism from any number of viewpoints, disciplines and interest groups. It is equally clear, again depending on one's social, economic, physical and design bias, that merits of a very substantial and timely nature are inherent in each project.

My initial charge in this enterprise was also to write a long introductory background to the projects which might put them into the context of general problems and developments in urbanism today. This introductory section, in the writing, got out of hand and took on a life of its own. Thus, it is published separately, a companion volume to this one, as *The Future of the City: New Directions in Urban Planning.*

That isn't the end of the unusual nature of this enterprise. Originally, there was to be a museum exhibition of the projects portrayed in this duograph. Then the study models began to grow. Ideas began to solidify, only to change six months later and then change again, thus requiring continual reworking of models and drawings. Eventually, the whole dynamic and organic condition of many ideas intersecting with matter seemed best handled by film. Thus, exhibition gave way to film-making, and now each project is separately captured—frozen, so to speak, at one point in a process of continual evolution—in 16 mm color films by Francis Thompson. Like the projects themselves, the films are entitled *Street* and *City Corridor.*

It is especially pertinent that both proposals, though by architects, seize transportation and the public right-of-way as the center of attention. Yet, as is quite obvious, this altogether appropriate focus for large-scale redirection through urban design leads to very different proposals.

Franzen concentrates on reordering and reapportioning the public right-of-way for greater pedestrian use at grade level. He proposes entirely new transportation modes throughout, a prospective leap of considerable magnitude. And he suggests very little new building except the utility service structure.

Rudolph, on the other hand, grapples especially with the urban highway as we now know it. He sees the potential for a new order in our cities through new construction in relation to and integrated with the transportation network. Buildings are inserted into the transportation right-of-way to make that area at once more complex and more intensively used. The corridor is thus intended to become a contiguous, visible organizing element of the city.

There is within the details of each project an unusual richness. Each presents a variety of urban design ideas of considerable interest. In general direction, the proposals contrast in their very different attitudes toward the role of transportation and the uses of the public domain. They thus add up to fundamentally different views of an appropriate future for our evolving cities.

Peter Wolf
New York City
May, 1974

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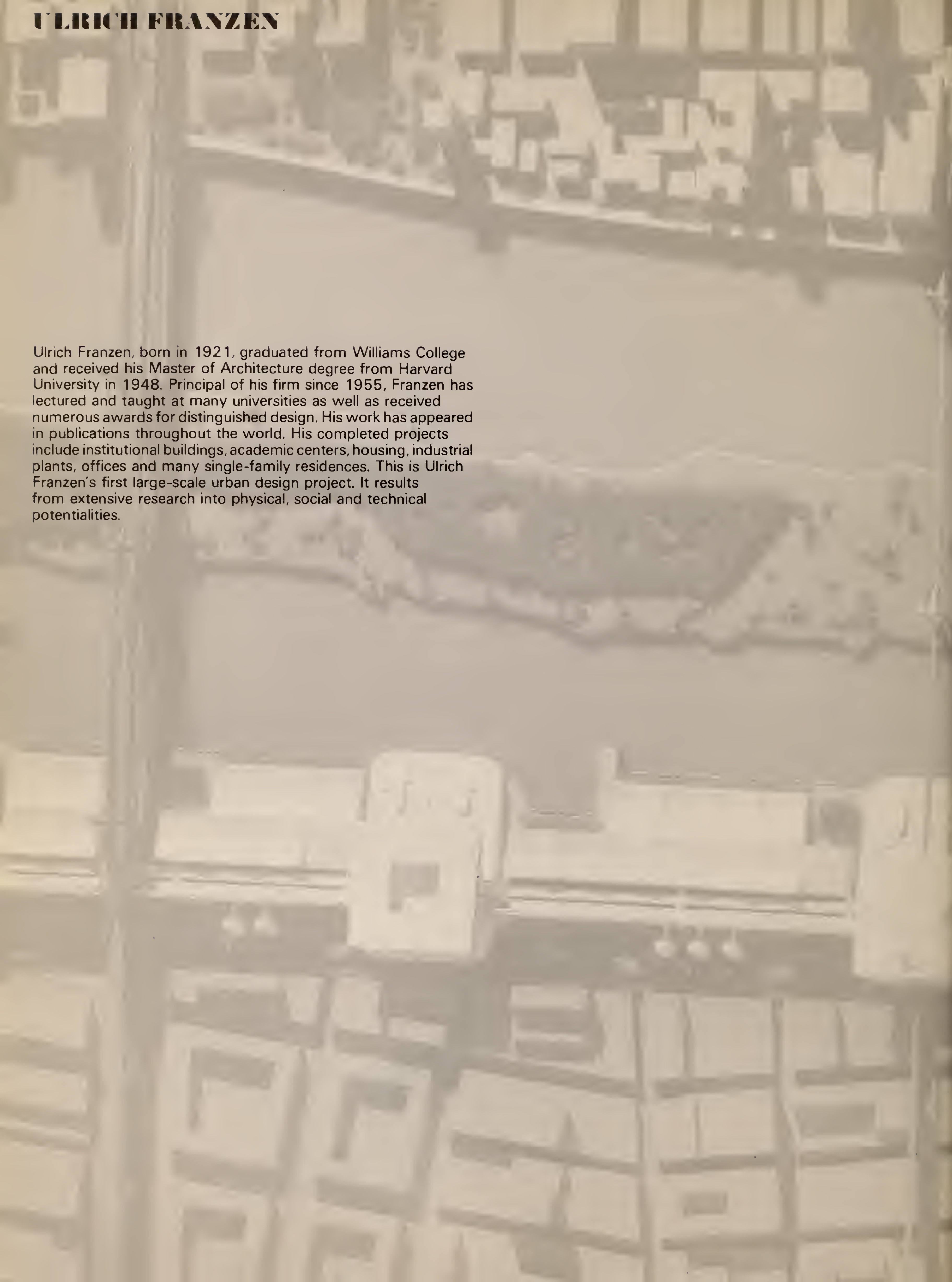
STREET

ULRICH FRANZEN

Ulrich Franzen, born in 1921, graduated from Williams College and received his Master of Architecture degree from Harvard University in 1948. Principal of his firm since 1955, Franzen has lectured and taught at many universities as well as received numerous awards for distinguished design. His work has appeared in publications throughout the world. His completed projects include institutional buildings, academic centers, housing, industrial plants, offices and many single-family residences. This is Ulrich Franzen's first large-scale urban design project. It results from extensive research into physical, social and technical potentialities.



INTRODUCTION

The stimulus to engage in this project is provided by the need for innovative attitudes toward improving the existing urban environment. It appears to us that most past models for the reordering of the existing urban environment are inadequate and generally contain fallacies. Our work seeks to provide an impetus for the derivation of new models that will provide more appropriate patterns for necessary actions. These models will hopefully fulfill our most basic conviction: that the quality of life in existing cities must be dramatically changed to provide dignity, place and beauty, if the cities are to have a chance at all.

Since the project began four years ago, positive changes have occurred in the attitudes of the intelligent public and political leaders toward the problems of people in the urban environment. These new awarenesses include: (a) renewed respect for an existing social and urban fabric and recognition of the need to provide housing; and (b) recognition of the limited resources of "spaceship earth" and the attendant universal interest in ecology. Ecological concerns, however, have centered principally on the questions of animal life, plant life and pollution. Our proposal goes further. It provides a concept framework of a biologically balanced relationship between urban man and his environment, of the promotion of the well-being of both, and therefore of the promotion of life.

Our proposal is viewed as an outline of goals, a visualization of possibilities. Such an effort may, we hope, influence the future direction of both thought and action.

Premises. When considering the central city, we believe the following to be self-evident:

- The crucial problem is the quality of life for residents and the integrity of the environment sustaining this life.
- The limits of man's ability to tolerate the man-made overloads in the scale of structures, population densities and urban support systems have been exceeded—creating a public danger.
- A sense of place is a fundamental biological need contributing to human identity and dignity.
- Man must maintain his roots in nature in order to survive; therefore, the elements of nature, such as light, water and vegetation, must be accessible to him.
- The limited resources of the world demand an efficient reordering of all energy systems, especially in existing urban areas, if there is to be an acceptable future.
- The process of redesign of the city must be considered an open-ended strategy allowing for change and growth, guided primarily by humanistic—not materialistic—goals.

SUMMARY OF ISSUES AND IDEAS

The Study Area (Figures 1, 2)

The study area is Manhattan's East Side from 57th to 96th Streets, the East River and an adjacent part of Queens. The East Side of Manhattan is the most densely populated residential area in the world, containing over 200 living units per acre, compared with Tokyo at 145 and the remainder of New York City at 100. The study area is therefore a valid testing ground for ideas which would substantially reorder its existing condition to bring about an environment of high quality and dignity.

This sector is a high-density, predominantly residential area which is disrupted by a dehumanizing, citywide goods distribution system of trucks, overscaled and obsolete gasoline-powered surface transportation, and other vehicular service systems. The citywide distribution and surface transportation and support systems have no relation in terms of function, livability or scale to the residential needs or living patterns. In addition, the resultant sound and air pollution have produced harmful consequences too well known to be worth belaboring here.

A unique public health study made by the Cornell University Medical School suggests that the high-density living patterns of this sector, in combination with the dehumanizing scale of vehicular systems, is more harmful than in any other comparable section of the city. The area, then, also represents an ideal center to test those interventions required to reduce the overkill scale of energy and support systems, as well as the introduction of design strategies intended to convert present monotonous building masses into identifiable neighborhoods related to a physical setting.

Manhattan Sector—Liberating the Street
(Figures 3–18, 26, 27)

The first step is the removal from the existing urban fabric of those elements which overburden it and make any hope of a better life unrealizable. The second step, growing out of the first, is the liberation of avenues and streets from the steel grasp of vehicular systems and their return to the collective use of the people. It is the street at the scale of people which is the primary consideration of urbanism. With this in mind, we propose the total elimination of fossil-fueled machines from this sector and reduction of the quantity and scale of all vehicular support systems. The design proposes electric carts and electric caravan-type transportation systems for movement of people, pneumatic networks for mail and package delivery, as well as garbage, trash and sewage removal. Furthermore, east-west greenbelts are proposed which relate the sector to its two major topographical and natural assets—namely, Central Park and the East River. The purpose here is not only visual relief from the superscale man-made environment, but also the creation of a sense of place and belonging based on natural assets.

The Neighborhood. It is proposed that north-south traffic arteries through the study area be eliminated, as they are functionally unnecessary in their present form. They bisect neighborhoods, destroy the natural orientation, and thus inhibit living patterns. The north-south avenues, however, would serve well as neighborhood shopping centers and community service areas. Physically blocking these north-south routes permits the evolutionary development of a new infrastructure of services and commerce scaled to—and responsive to—adjoining neighborhoods. Crosstown streets, which are primarily residential, will in large measure be dead-ended. In place of bearing through traffic, the street then becomes a centrally placed neighborhood resource to be programmed and designed by the residents themselves. In fact, it is only with this or a similar concept that one can truly speak of the beginnings of an infrastructure related in scale to residential living patterns and community requirements. This step, combined with the neighborhood centers on the avenues and the east-west greenbelts, brings about a new orientation and creates an entirely new situation.

Regional Shopping and Commerce (Figures 19–21)

Related to the suggested remodeling of the residential areas are proposed designs for the dominating commercial area near the Queensboro (59th Street) Bridge, including the Bloomingdale's-Alexander's complex. The existing regional shopping and entertainment center is modified and simultaneously expanded at a more human scale. It connects the Lexington Avenue Subway, the proposed Second Avenue Subway, and the new 63rd Street Subway to Queens. This regional center is served and supplied by new support systems on the Queens side of the East River.

Queens Sector—Urban Support and Service Megastructure (Figures 22–25)

It is proposed that the existing transport and vehicular overburdens be removed into a transport interchange and bypass occurring on the Queens side of the East River, as well as into a right-of-way placed alongside the new Second Avenue Subway. The dynamic forces of commerce in a city such as New York must be aided and abetted; but they must also be channeled so they no longer destroy the quality of life in areas designated to be at a people scale. A good many of the essential services required by commerce, such as warehousing, distribution centers and light manufacturing, presently contribute to the chaos generated by support systems and the destruction of an environment suitable for habitation.

The design proposes to combine these essential but overscaled and inappropriately located services with a truck and auto bypass contained in a linear support structure paralleling the area it serves. The support structure also houses mechanical conveyor systems which move goods and supplies to their users in the existing residential and commercial sectors of Manhattan.

The support structure along the East River, built in conjunction with the truckway and through-traffic bypass, is conceived of as a place where intercity travel modes are exchanged for those suitable to transport within the densely populated city. For instance, the owner of a conventional automobile suitable for high-speed throughway travel stores his car in the interchange garage and transfers to a small electric "pod" vehicle to travel across connector bridges to his home. The vast storage areas for the conventional auto, designed around a system available from the Otis Elevator Company, would have direct access to a new bypass and intercity highways. It is also envisaged that this proposed support and interchange structure provide a rooftop takeoff platform for VTOL aircraft, for transport to airports and nearby cities.

By an accident of history, the entire eastern (Queens) edge of the East River is primarily underutilized industrial land. It abuts a belt of light manufacturing and warehousing facilities which provide a very large percentage of the blue-collar jobs within the city. The chosen site for the linear support system contains no residential quarters, nor, on the whole, does it come close to these.

The broad concept, then, is that of linear support and service devices at the large scale appropriate to present and future technological systems, including support and service facilities.

The linear service structure would supply portions of both Manhattan and Queens with essential transport services to promote dynamic growth, and at the same time relieve these areas of the large-scale technological interventions and obstructions that make living on a personal, human scale nearly impossible. As a consequence, the evolutionary, regenerative remodeling of existing areas adjoining the support system could be accomplished at the scale appropriate to human life while restoring a balance between people and their habitat.

The linear system is open-ended in the sense that the suggested facilities can be built in increments as needed. In addition, facilities not now conceived of, but which surely would develop as the system is established, can be attached to the basic support system.

The East River (Figures 4, 5, 7, 22–24, 26)

Within this new approach, where a large-scale service and support spine parallels residential and smaller-scale commercial sectors, the East River emerges as one of the city's central features. The new structure proposed on the Queens side of the East River provides a major opportunity for reclaiming and recognizing the river's new role.

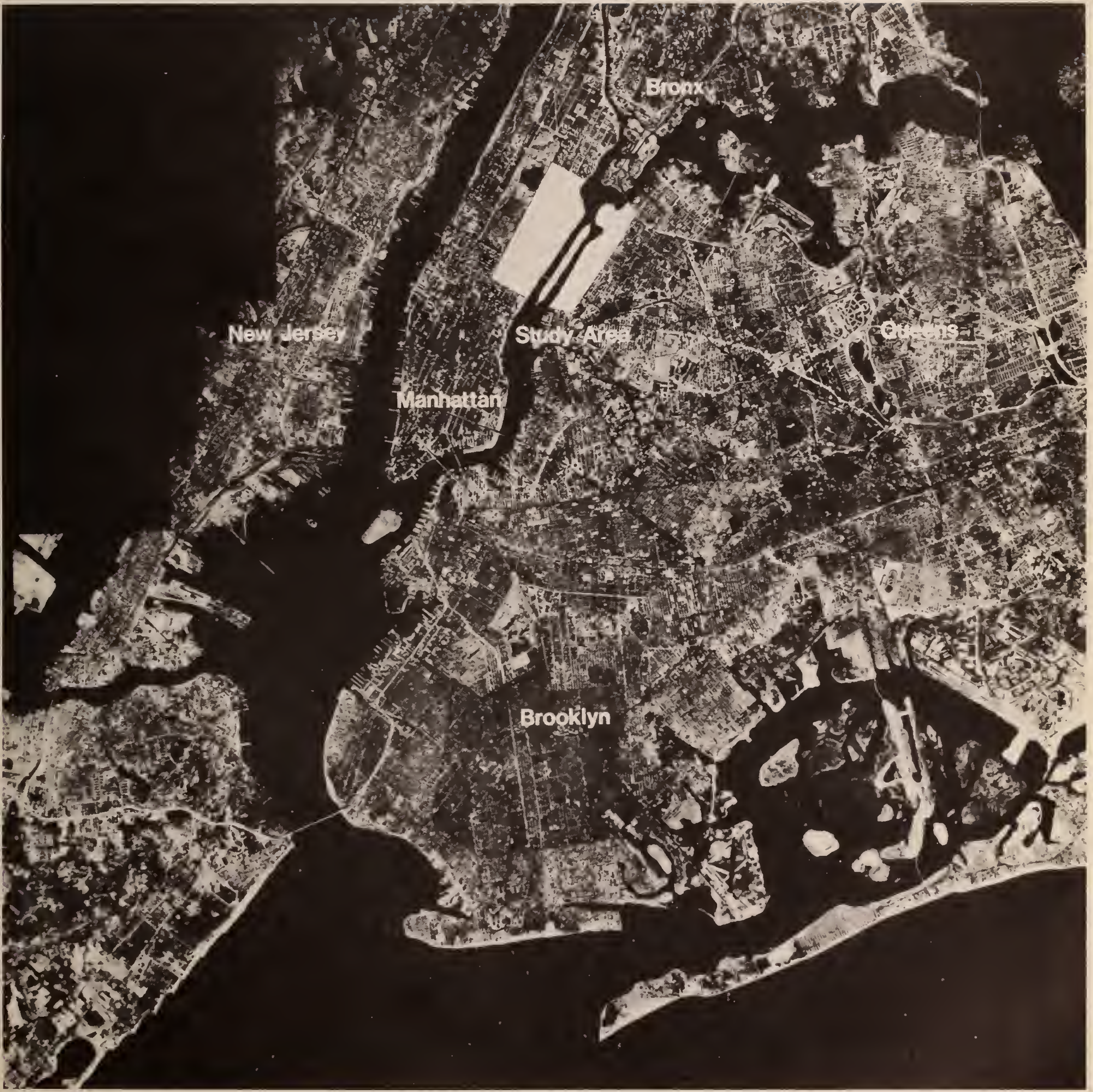
The development of the East River as a positive amenity is furthered by the east-west greenbelts proposed in the residential study sector; it is also furthered by the linear support structure, which emphasizes the river's edge and provides riverside pedestrian promenades. It is felt to be essential that Roosevelt Island remain predominantly open green space, accessible from all the boroughs by the new subway. To improve access to the island, as well as to promote enjoyment of the waterfronts of the city, a skylift with gondolas is proposed. This lift system would straddle the river's edges and touch down on Roosevelt Island, as well as in all nearby boroughs.

It is hoped that these broad concepts demonstrate that sensible re-ordering of activities occurring within a vast metropolis can provide a surprisingly new environment within the existing structures and grids of the city—an environment which is not only free of the noxious overload of obsolete technology, but which can grow into a variety of neighborhoods and even blocks, each employing whatever architectural wit and planning wisdom they can muster, in the development of the liberated street. Conversely, the superscale activities necessary to the city's commercial and institutional life can thrive and grow when reordered into megasystems appropriate to their function and located in settings that do not overwhelm the delicately scaled infrastructure of human living patterns.

This study of the world's most densely populated residential area clearly illustrates that high-rise, concentrated habitats are indeed feasible if the communal ground at or near street level is freed from the enslavement of fossil-fueled, heavyweight vehicular systems, while permitting people-scale centers of activity and association to grow and change, determined solely by the needs of the inhabitants themselves.

THE PROPOSAL

1 Study Area Orientation Plan



The Study Area (Figures 1, 2)

The study area for this project is primarily located on the northeast side of Manhattan. Specifically, it is bounded by 57th Street on the south, 96th Street on the north and Central Park on the west, and crosses the East River to include a portion of Queens on the east. The scheme does not stop at the river's edge; it attempts to straddle the water in order to make the East River an amenity in the larger urban context (Figure 1).

The network of freeways, as it exists today, is shown. The new scheme links the Grand Central Parkway and various Westchester County expressways to the north of Manhattan with the Brooklyn-Queens Expressway to the southeast. This provides the motorist a north-south bypass of Manhattan. Special non-automobile linkages from this new expressway into Manhattan are also proposed, as shown by the three new bridges within the study area, which are discussed later.

An aerial photograph of the study area illustrates a principal problem: existing excessive and overburdened vehicular transportation networks imposed on the world's most densely populated residential area (Figure 2). Yet much of the vehicular traffic forced to traverse the area does not originate or stop within it. This is especially true of truck traffic along First, Second and Third Avenues. The network is loaded, as well, with very heavy traffic from east to west through relatively narrow streets. Each of the avenues and east-west streets is used in about the same manner as a vehicular throughway with the exception of Park Avenue, which is differentiated by design and restriction of certain types of commercial traffic.

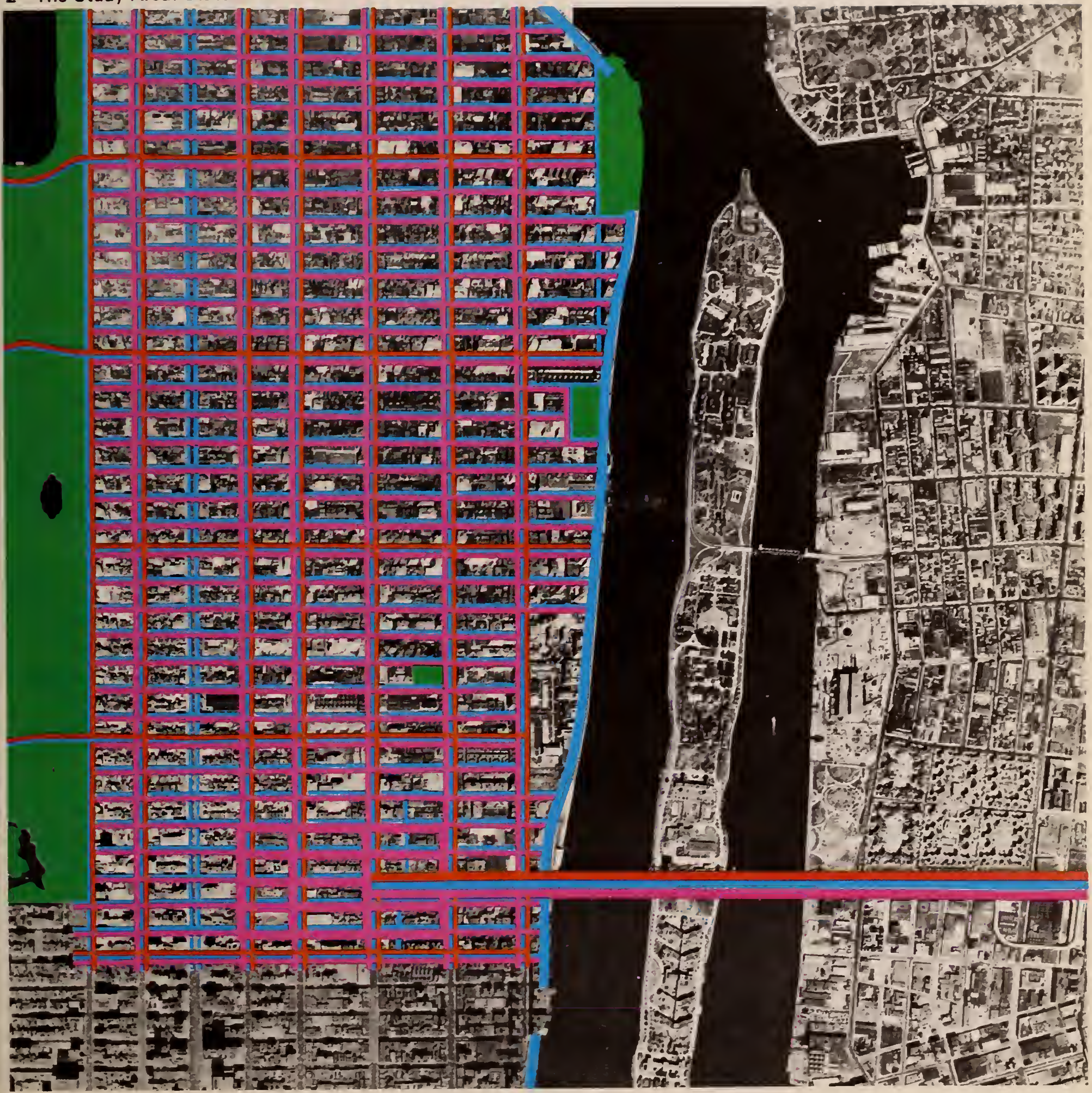
The lack of open space in the study area is also revealed. Central Park provides a large open area, as does the East River; between them, few green spaces have survived. Carl Schurz Park, John Jay Park and a small playground near a public school are the only park areas available to the many people who live in the area.

One further piece of surprising information is revealed by analysis of present conditions: population within the study area is twice as dense as in the rest of New York City, with 210 living units per gross acre. On the basis of density, this could be considered slum living conditions by conventional standards.

Key for Figure 2:

🟦 auto traffic
🟪 truck traffic
🟥 bus routes

2 The Study Area: Statement of the Problem



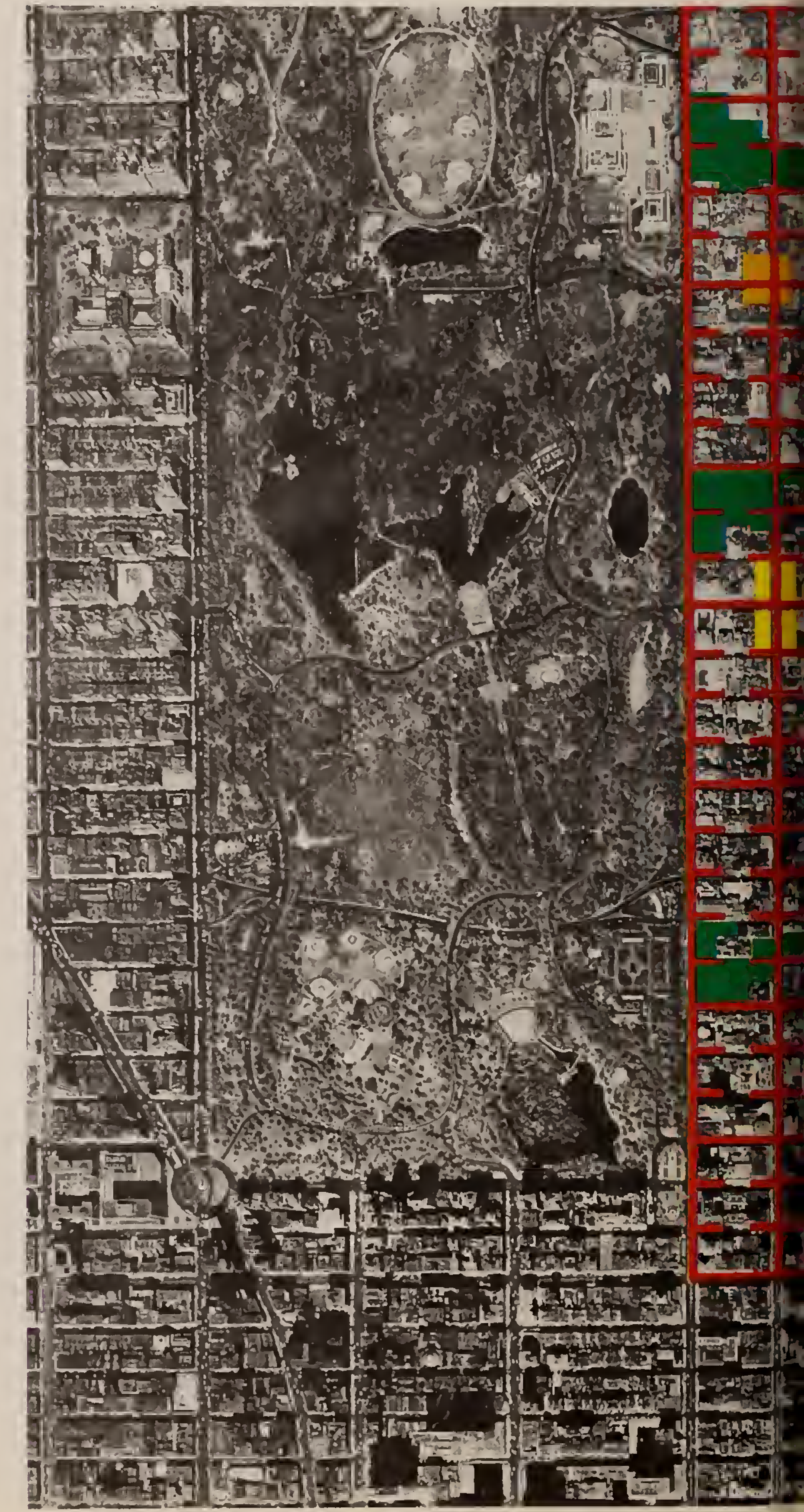
Overview of Proposal (Figures 3–7)

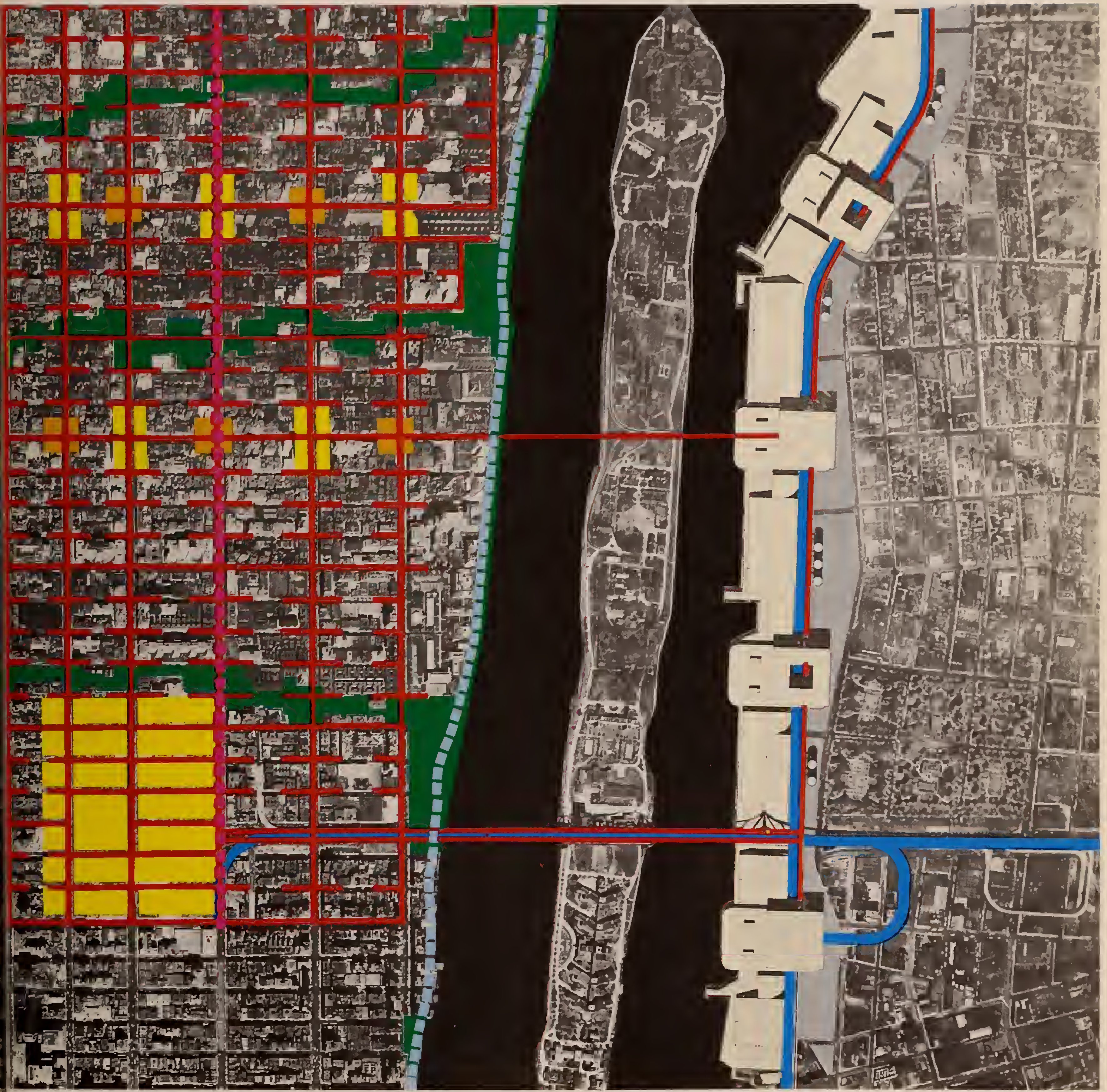
All internal combustion engine vehicles are eliminated from the study area, except for those required for municipal services (Figure 3). By eliminating the conventional fossil-fueled motor car from most streets and avenues, the Manhattan sector of the study area is reorganized to be experienced in entirely new ways. Ten neighborhood units emerge. Streets (which occupy about 40% of the city) are generally turned back to the use of people. Conventional cars are channeled across the Queensboro Bridge; automobiles continue to use the FDR Drive; truck traffic to Queens is funneled into a below-ground Second Avenue truck right-of-way to be built in conjunction with the Second Avenue Subway. The rerouting of vehicles into Queens provides a link to the proposed new freeway along the east side of the East River.
A north-south loop electric "caravan" bus system links the

3 Overview of Proposal: The Study Area

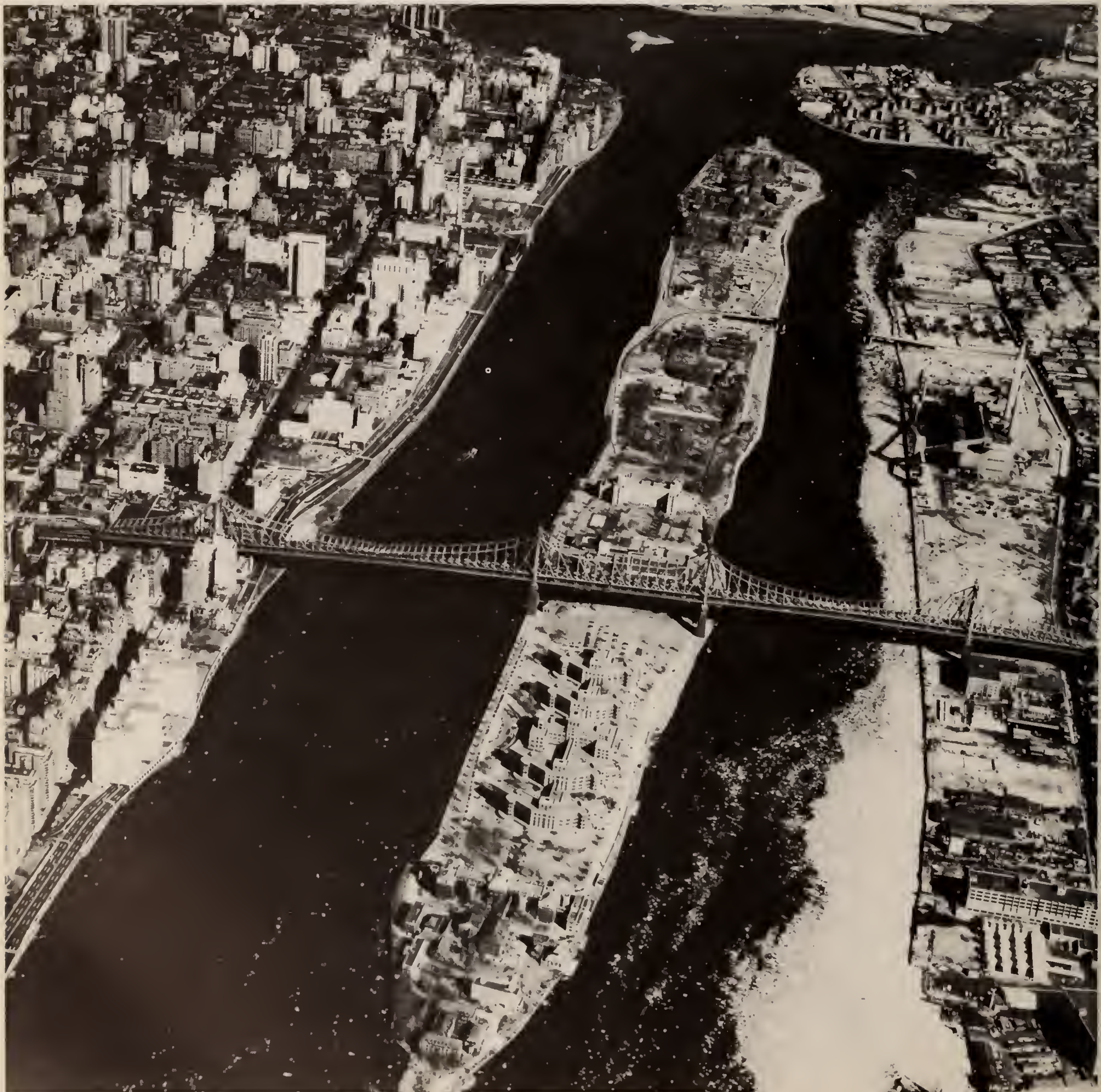
Key for Figure 3:

- 🟨 commercial centers
- 🟧 squares-municipal centers
- 🟥 line-proposed vehicle system
- 🟦 line-vehicle bypass
- ▨ dotted-truck bypass
- 🟪 dotted-subway
- ◻ new megastructure
- 🟩 new parks





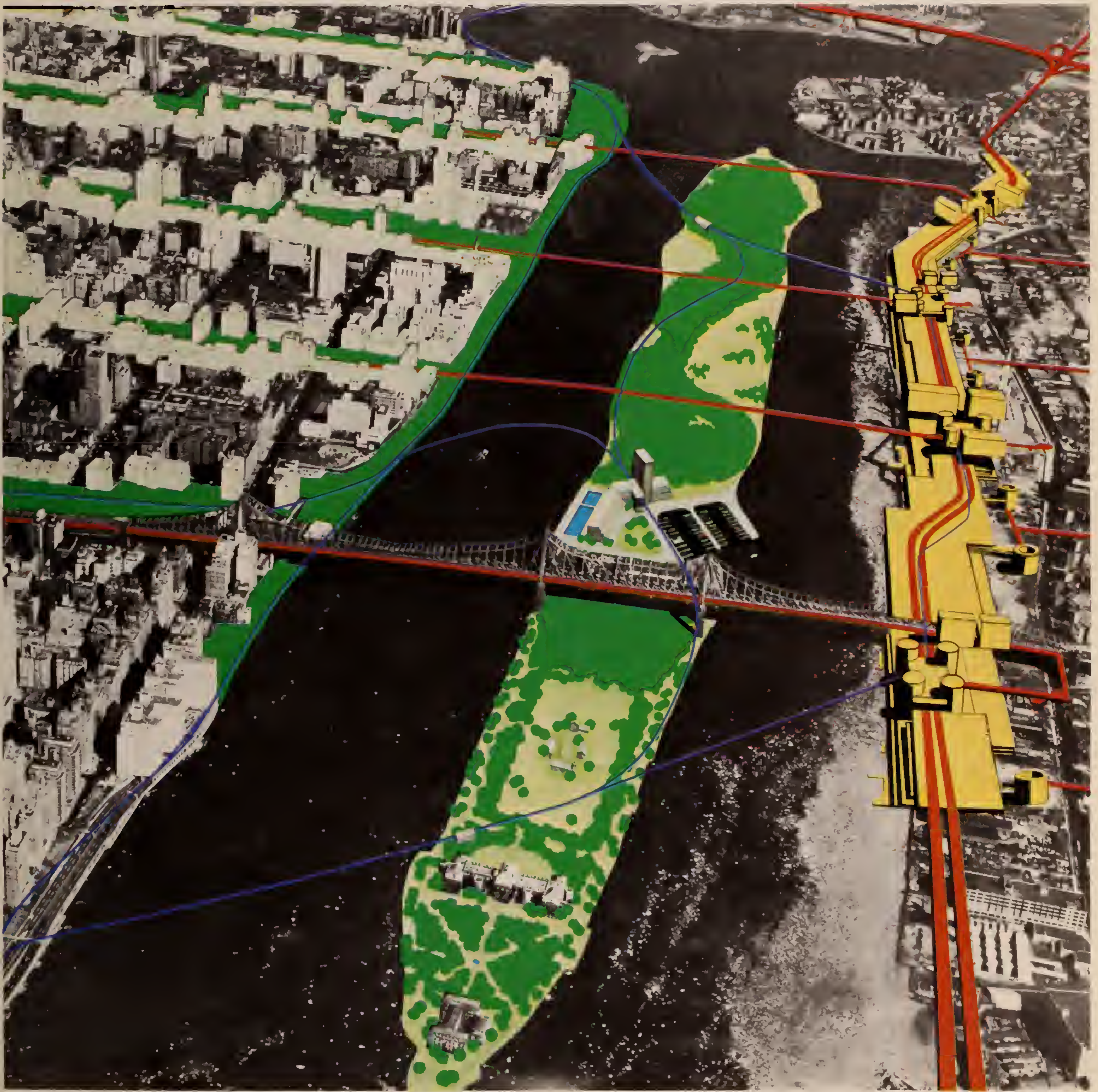
4 Overview of Proposal: East River Existing Situation



neighborhoods. This system does not utilize the conventional bus as we know it. Based on a theoretical prototype proposed by New York urban planner Mary Hommann, it is composed of a small electric cab which pulls a train or "caravan" of several passenger cars, the caravan traveling slowly to reduce pedestrian hazards. On the most important cross-streets—96th, 86th, 79th, 72nd, 63rd and 57th—there is east-west service by silent, slow, predictable electric vehicles which cross the East Side and enter Central Park. By a system of transfers one can travel to within one block of virtually any destination in the study zone. At 86th, 72nd and 59th Streets, the new crosstown buses cross the East River to the new transportation terminal in Queens on two new bridges and an additional level of the Queensboro Bridge.

The existing and planned subway system links and traverses all parts of the study area. The present Lexington Avenue Subway runs north-south, with stations in the regional center and the subregional center. The 63rd Street Subway, currently under

5 Overview of Proposal: The East River



construction, is shown with a station at 63rd Street and Third Avenue. It continues under the East River with stops at Roosevelt Island and a new stop-linkage to the transportation megastructure in Queens. Second Avenue Subway stations are proposed at 63rd, 72nd, 79th and 93rd Streets.

An innovative linear urban support and service megastructure and transportation terminal is constructed along the eastern edge of the East River to organize all modes of conventional transportation into a coherent system. (Figures 4, 5.) Bus and through truck and automobile traffic flow north-south on grade-separated rights-of-way, buses and trucks on one level, automobiles on another. (A large amount of the truck traffic that currently travels through Manhattan would benefit from a bypass route, which is provided in this scheme.)

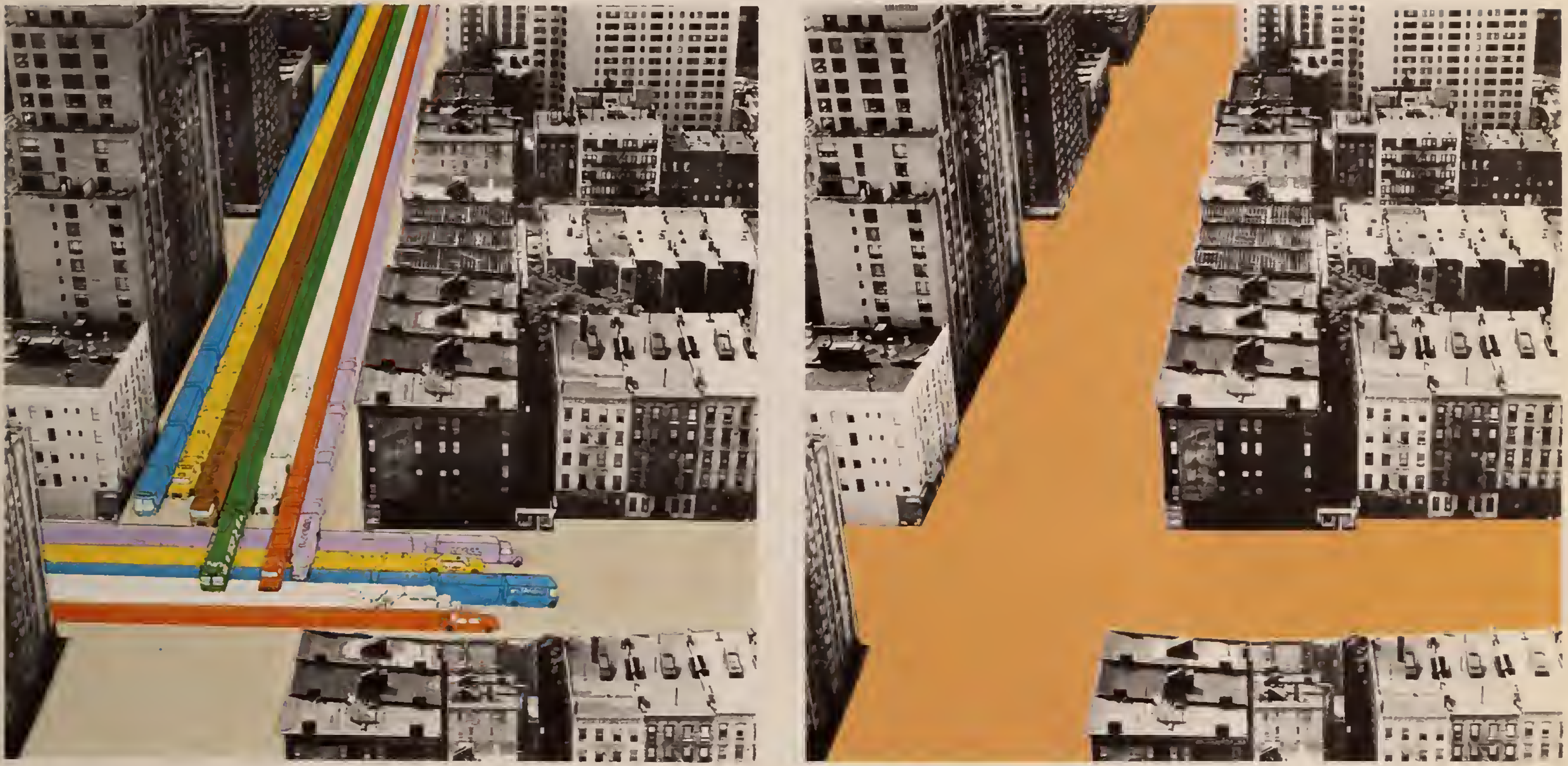
The megastructure also provides a terminal for and contains the high-speed rail line projected to serve the Boston-to-Washington corridor. The terminal has a large automobile storage capacity and access to new travel modes linked to Manhattan. Routes for electric vehicles are established within the megastructure between the more built-up areas, or nodes. The nodes themselves are designed to be parking docks, electric pod storage areas, and transportation centers for modal change, including rail and VTOL or STOL interurban aircraft. At each center, large-span office or commercial space is made available.

This diagram also illustrates a major expansion of park area. By building over the FDR Drive, a new linear park is created from 96th Street to the Queensboro Bridge. At carefully selected intervals, Central Park is linked to the new River Park via finger parks.

New crosstown greenbelts, distributed almost equally throughout the study area, form potential boundaries for new neighborhoods. They also make contact with special pedestrian and recreation areas such as the Central Park Zoo, at about 63rd Street; the reflecting pool, at 75th Street; the Metropolitan Museum, between 81st and 83rd Streets; and at 90th Street, the new finger park leads directly to the walkways surrounding the Central Park reservoir. At the river's edge, several of the finger parks abut existing open recreational spaces to create continuity of greenbelts throughout. The northern finger park links to Carl Schurz Park and in the vicinity of 75th Street a direct connection between John Jay Park and Central Park is suggested. In the vicinity of 63rd Street, a large open area south of Rockefeller Medical Center penetrates all the way to the zoo in Central Park, opening this area for public use.

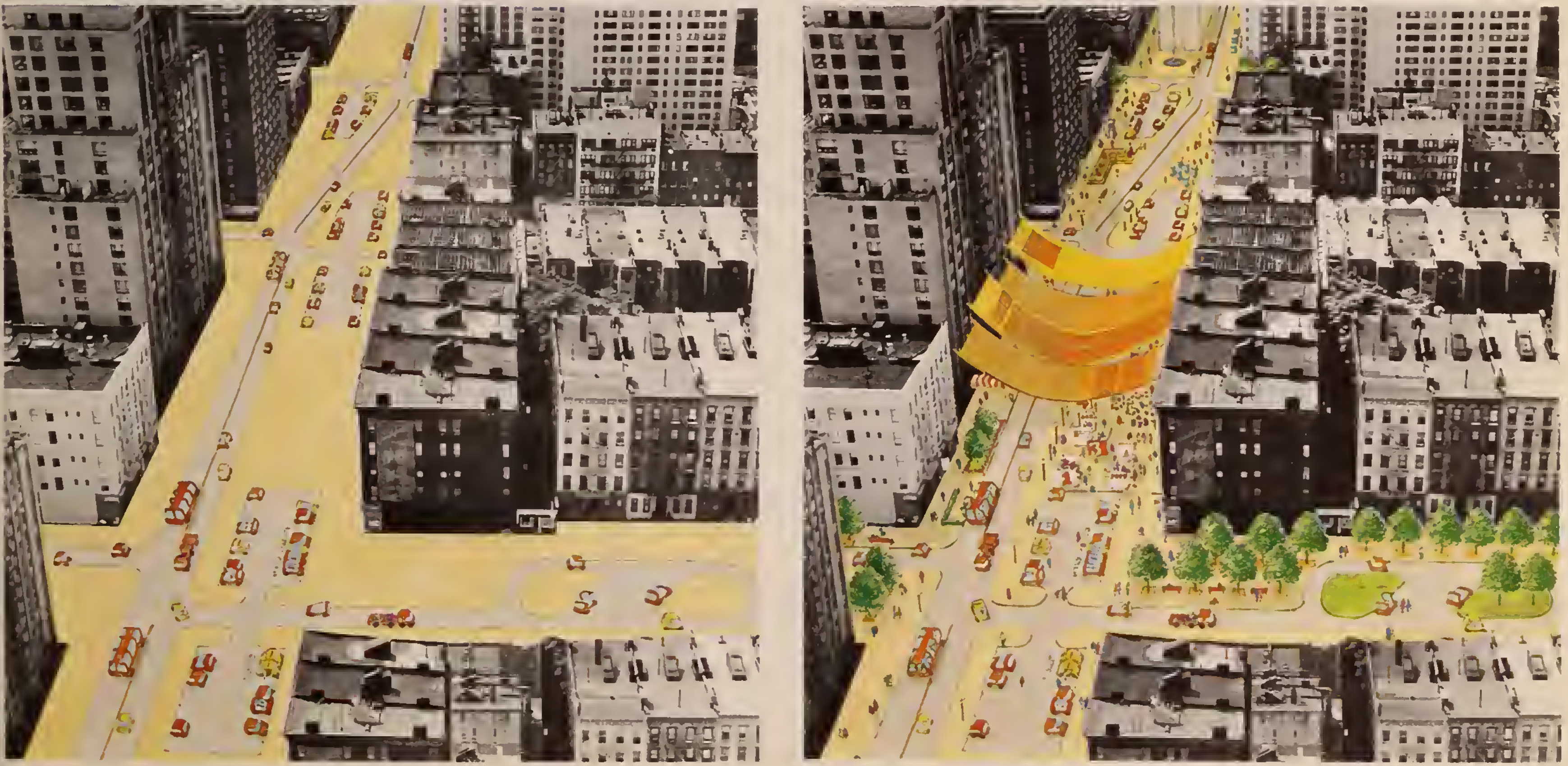
Two principal non-neighborhood commercial locations are anticipated where much development already exists: in the 86th Street area, a subregional activity center is envisioned, while between 57th and 63rd Streets, centered on Third Avenue, a large regional commercial-recreational center is anticipated. The existing center between Lexington and Third Avenues is expanded to the east as far as Second Avenue. The motivating force for this strong commercial development is access to public transportation. The proposed regional center becomes a point of interchange between the new Second Avenue Subway, the 63rd Street Subway and the existing Lexington Avenue Subway. It is served by an internal above-grade pedestrian conveyor which courses

6 Proposed Redevelopment of Public Open Space and Elimination of Internal Combustion Vehicles



6a The Existing Situation

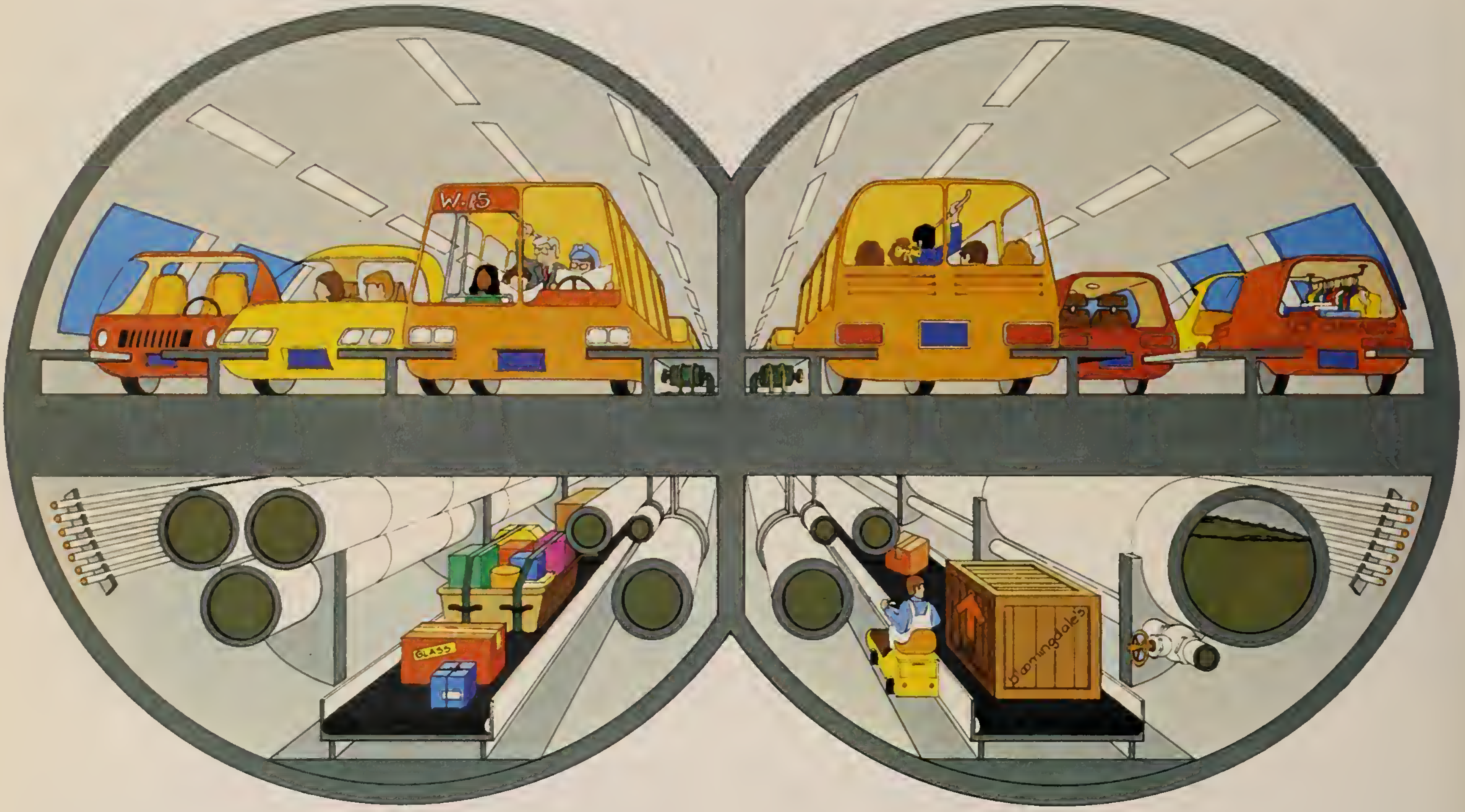
6b Public Urban Space



6c Street Reallocated

6d Proposed Condition

7 Cross-River Tube Bridges



through major stores and connects all transit stops. The transportation-commercial node centers on Third Avenue at 63rd Street, since it is equidistant from the old Lexington Avenue Subway and the new Second Avenue Subway.

Roosevelt Island north of the Queensboro Bridge becomes a wilderness park with marina and convention and resort facilities. South of the bridge, additional park area is combined with a working farm and pastures, where children can see animals as they exist in the country. At the southern tip of the island, two large existing structures are preserved, which could be used as guest residences for visitors to the United Nations.

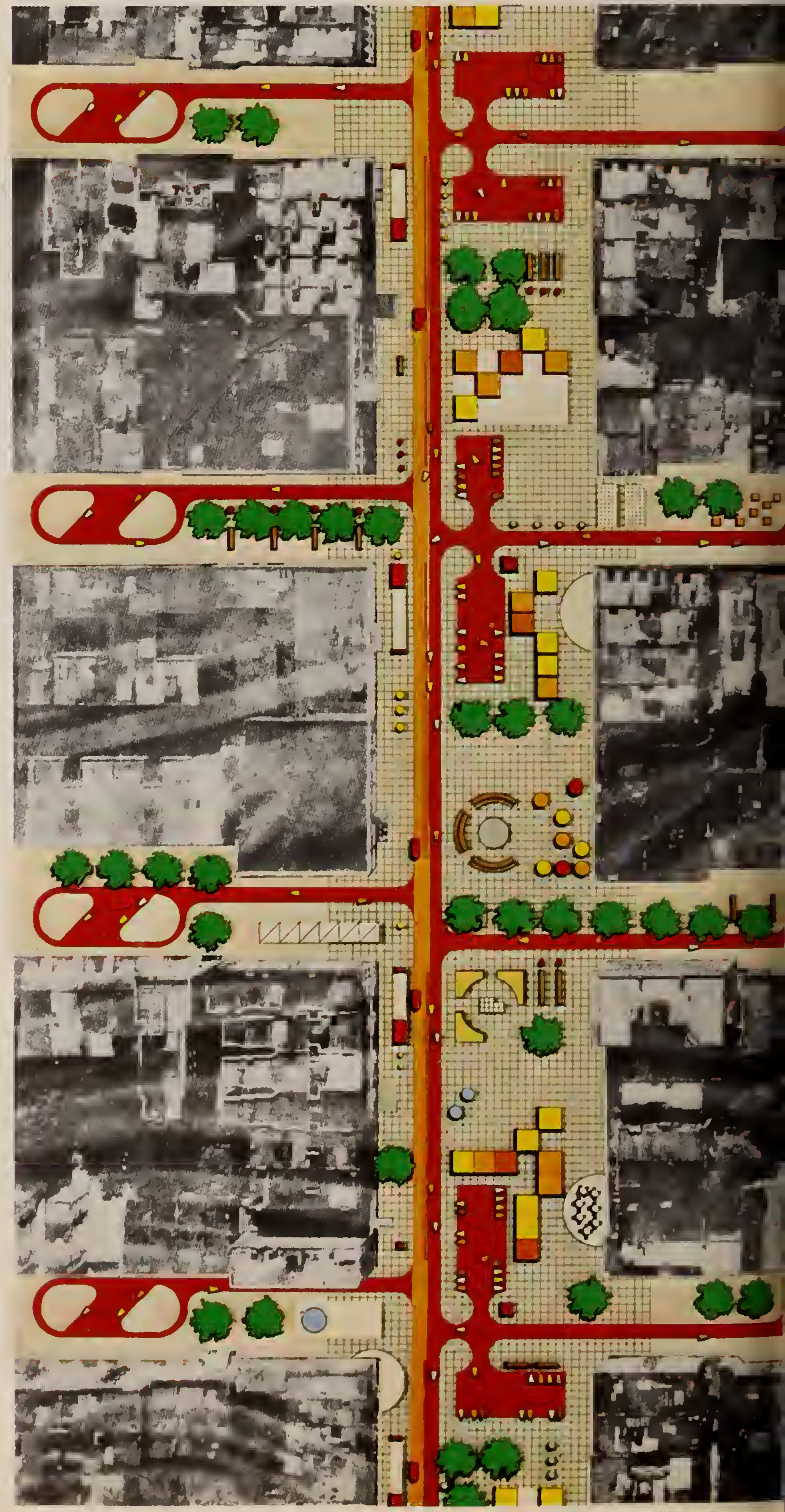
Access to Roosevelt Island is via the new 63rd Street Subway, the existing Queensboro Bridge, ferry from either side of the river, or a proposed skylift. The aerial conveyor extends down the East River along River Park, traverses a number of finger parks to Central Park and crosses the East River at various points to link Manhattan with Roosevelt Island and the Queens megastructure. This system has a number of stations along the way where one may enter, leave or change routes.

An innovative electric vehicular system replaces the present internal-combustion automobile, truck and bus throughout the study area. This proposal to remove internal combustion vehicular traffic, regain use of the street right-of-way for people and expand the park system is seen as the first phase of an evolutionary development that will eventually extend to all of Manhattan (Figure 6).

Complex multilevel bridge tubes span the East River at 86th and 72nd Streets and the Queensboro Bridge. These bridge tubes carry pod vehicles between Queens and Manhattan. They also contain major utilities—sewage, water gas and power (Figure 7). These basic urban systems are pumped through the transportation service megastructure. The linear structure is used to concentrate and supplement existing utility services as they become obsolete, a necessity if the city is to function adequately.

The Neighborhood (Figure 8). While they cover about 40% of the city's surface, the streets have generally been lost as a resource for the people. This proposal creates new, well-defined neighborhoods by turning over nearly all the street and avenue surface to various kinds of neighborhood uses. About 5% of the former street surface continues to be used for transportation and access. But the transportation system, totally new miniaturized, electric "pods" and caravans for personal and public use, move people pleasantly, quietly and without pollution.
Most east-west streets are closed. In them, new space is gained for block residents to create facilities they like. The avenues are liberated for new uses such as school, public institutions, police stations and firehouses, which would serve adjoining neighborhoods. On alternate avenues, commercial and business centers for neighborhood convenience use would be encouraged.
This drawing illustrates in plan a number of neighborhoods. Shopping or commercial centers in the avenues are covered by canvas or hard roofs to create a sense of local center or "place." Existing streets and buildings are generally maintained. Streets are

8 The Neighborhood



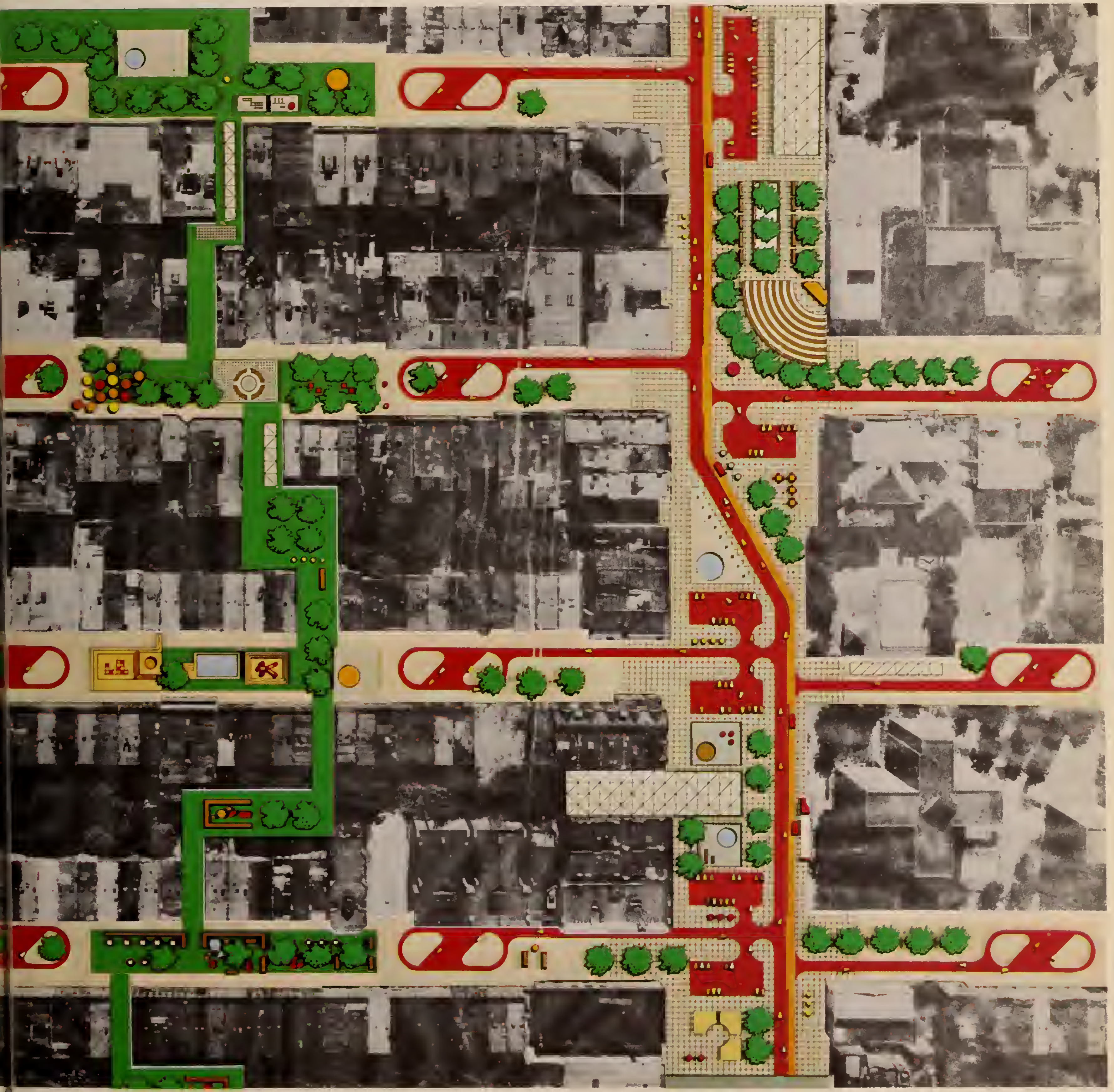
simply and inexpensively modified to handle the electric pod vehicles, each of which occupies about half the space of a conventional car. The saved space is turned over to pedestrians and community use. Taxis and rented pods are allocated a two-lane route with each lane approximately 6 feet wide. This creates a 12-foot-wide conventional right-of-way for emergency ambulance, fire truck, police, etc. Emergency vehicles can also drive into cul-de-sacs so that complete fire, police and ambulance service is assured. Caravan bus routes are spaced selectively. Cul-de-sacs on east-west streets are restricted to temporary use by delivery vehicles, taxis, etc.

Pod parking occurs on each block, off the avenue, in lots accessible to all locations. A pod is rented as needed, left in lots when not required, and there electrically recharged. Selected two-way east-west streets contain pod routes. Major two-way cross-streets such as 72nd Street contain both caravan and pod service.

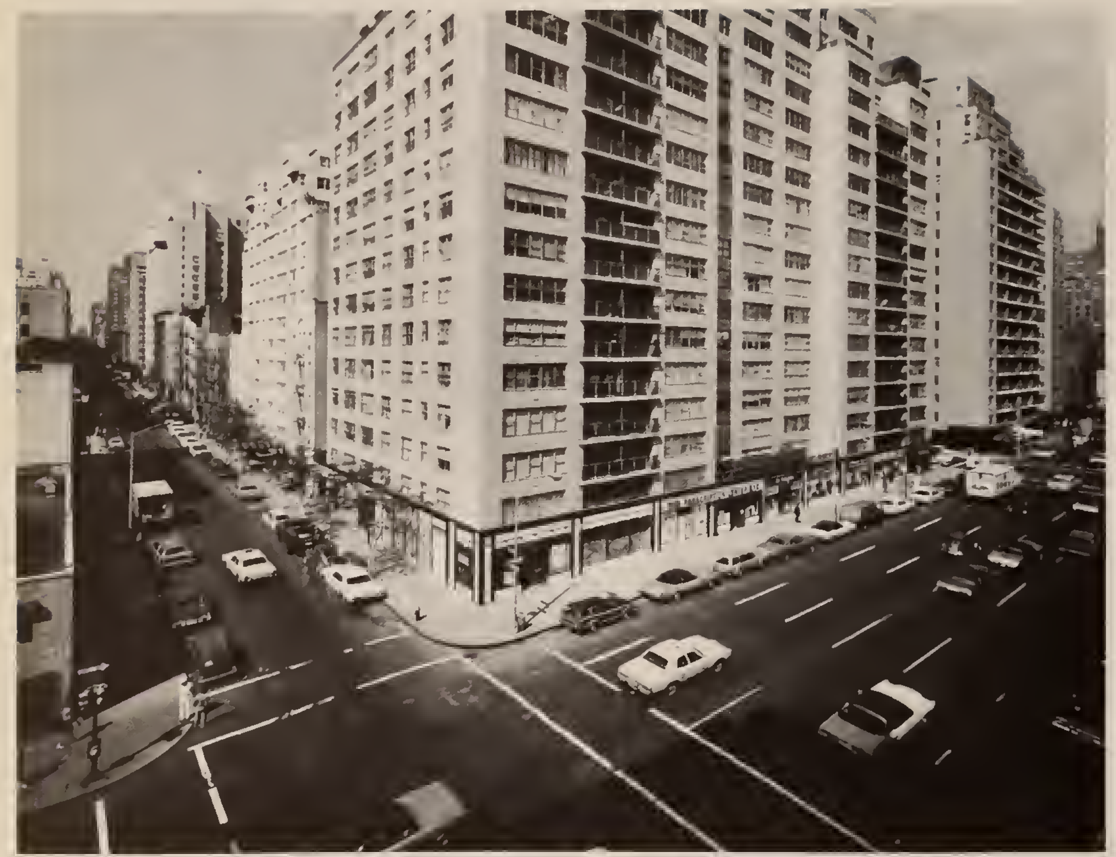
The irregular pod and caravan lanes in the avenues provide interesting city space vistas for the rider. Buildings might be constructed in these former rights-of-way, which would diminish the canyon effect of Manhattan streets while creating a variety of orienting spaces.

A finger park is shown at the top of the illustration. Smaller green areas penetrate from the finger park through midblock and connect to mini-parks in the centers of the east-west streets. Thus, the block park network traverses the neighborhood and links to the larger finger parks.

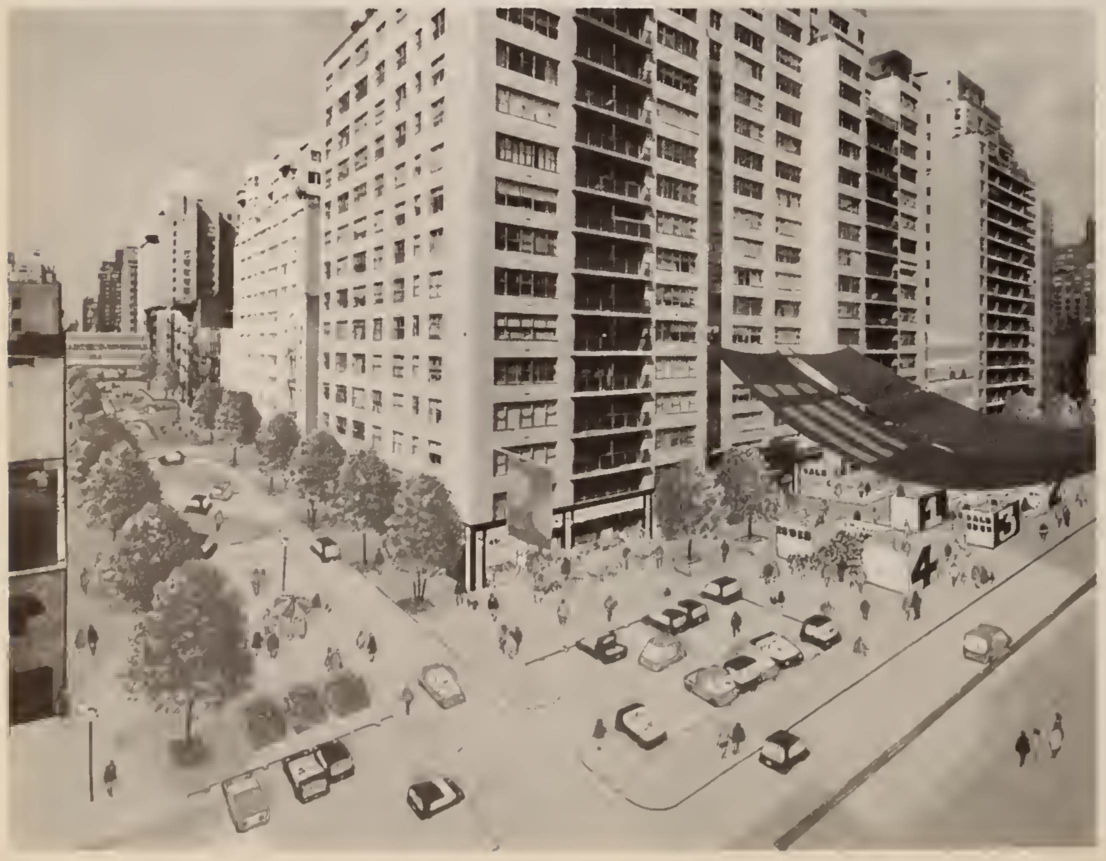
The open-space organizing device is based on a systematic hierarchy of parks. Central Park and the new River Park are connected by a network of smaller, east-west finger parks. Neighborhood street parks penetrate north-south, as through-block green links that open up back yards. These link to block parks within the former street right-of-way. A complete network of walking and bicycling trails is established to minimize points of conflict with vehicles. The acquisition of through-block, block and finger park space obviously presents an operational problem which requires a long, evolutionary, phased-development plan.



9 Existing Condition: Streets and Avenues



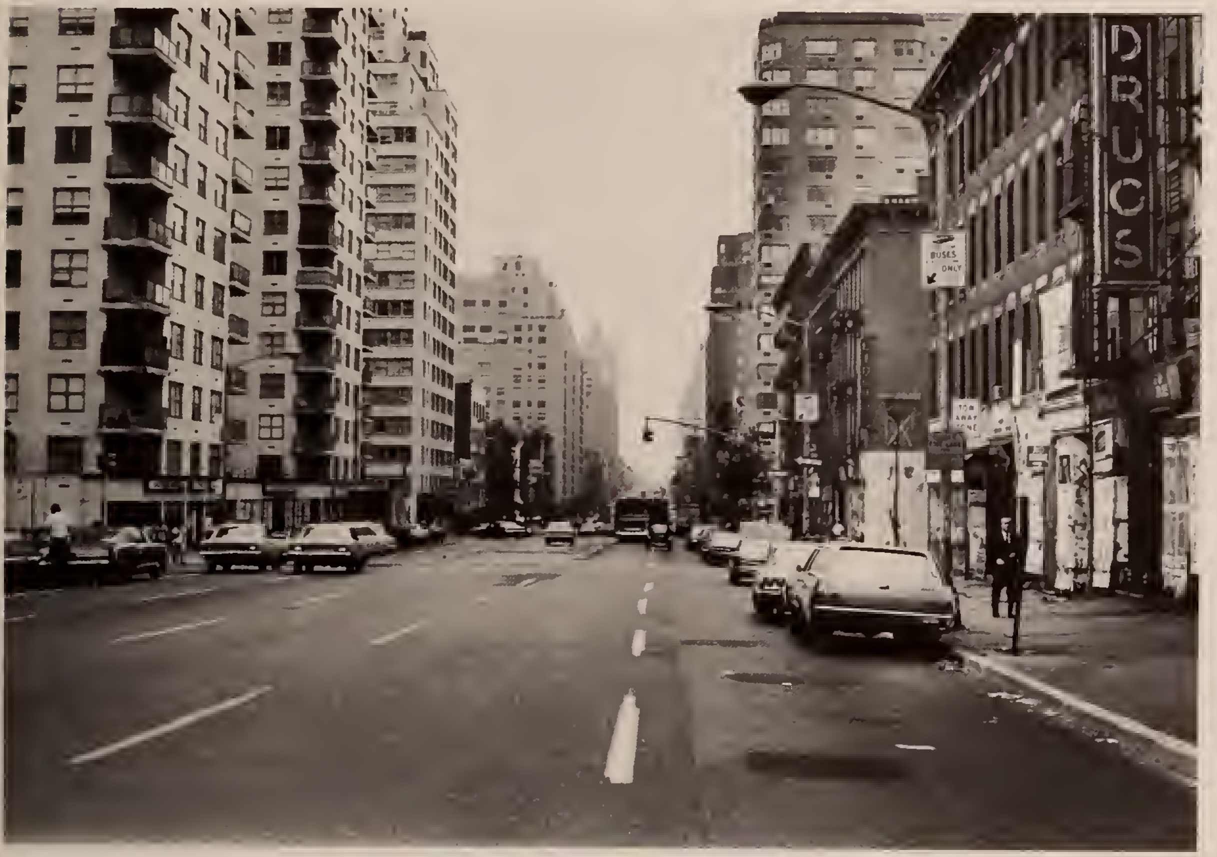
10 Proposed Condition: Streets and Avenues



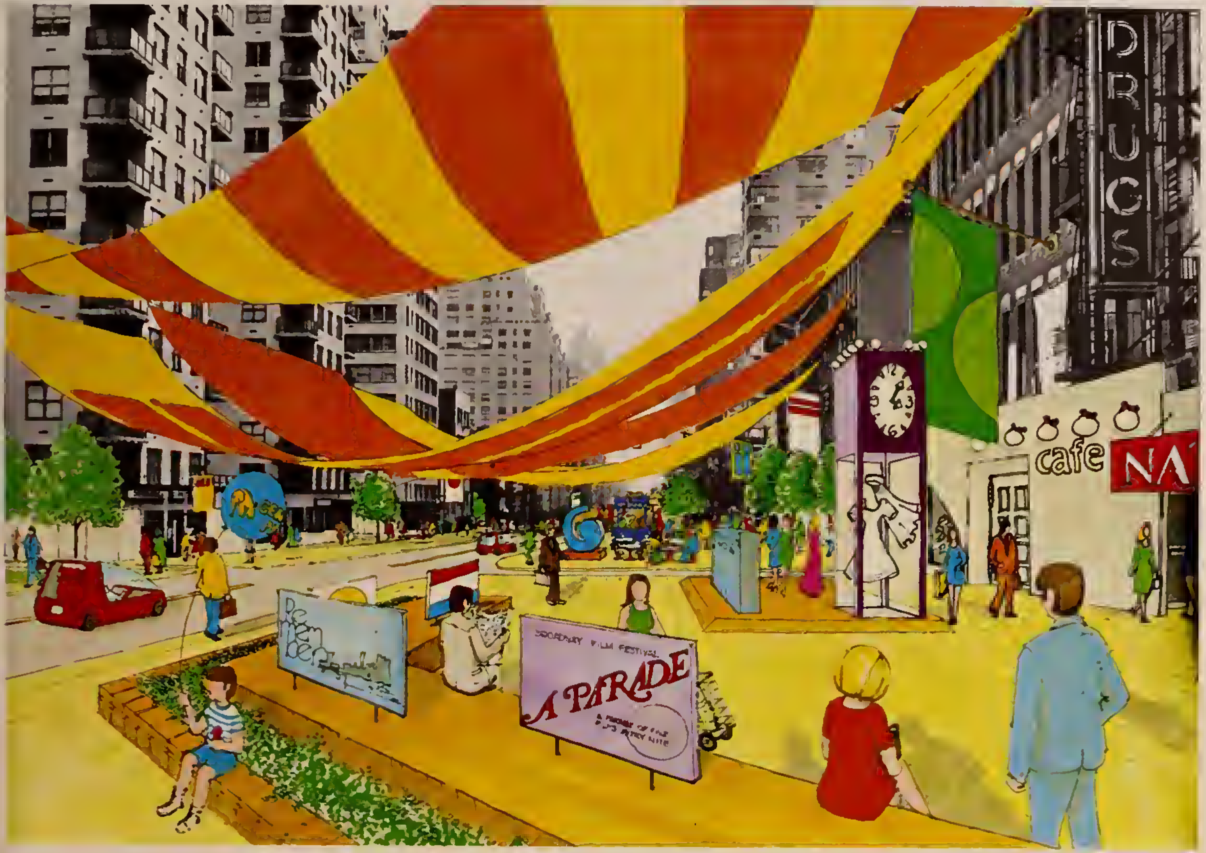
The Avenue (Figures 9–14). This photographic sketch compares the existing situation to the proposed avenue and street pattern. Conventional cars are eliminated. Within the reclaimed pedestrian area, sidewalk cafés, pools, fountains and commercial displays flourish. Buildings are constructed along the pedestrian right-of-way. Pod parking lots, two-pod lanes and caravan bus are present. The large canvas awnings create a festive commercial center at little cost and without structural complication.

The avenues continue their present primary use, i. e., commercial or institutional zones. By angling the reserved narrow transport lanes, a wide swath of the street is regained for pedestrian use. This reclaimed space alternates from side to side along the avenues. Within the avenues, a number of new construction possibilities are anticipated. The city might sell air rights or even property rights for development. New buildings could span the avenue or remain within the reclaimed pedestrian area.

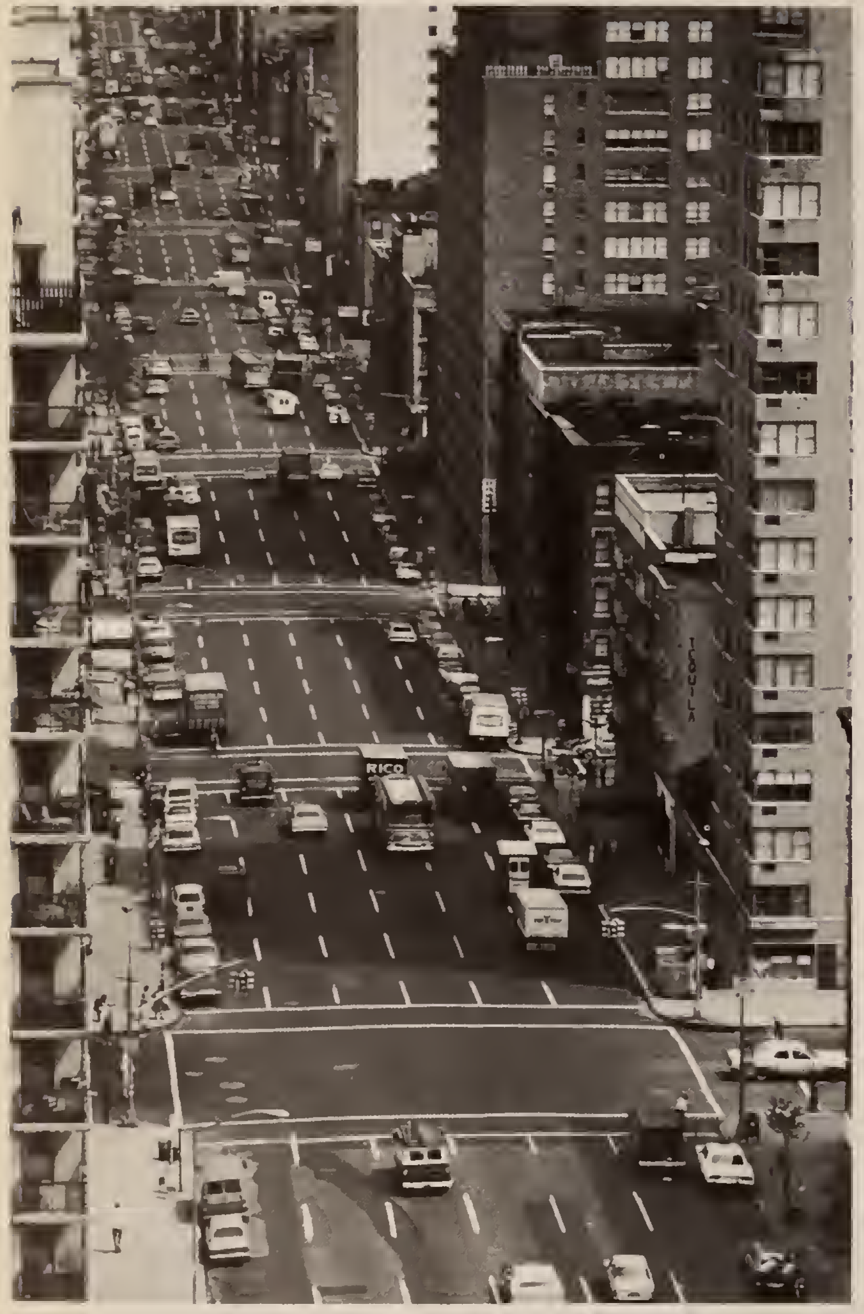
11 Existing Avenue



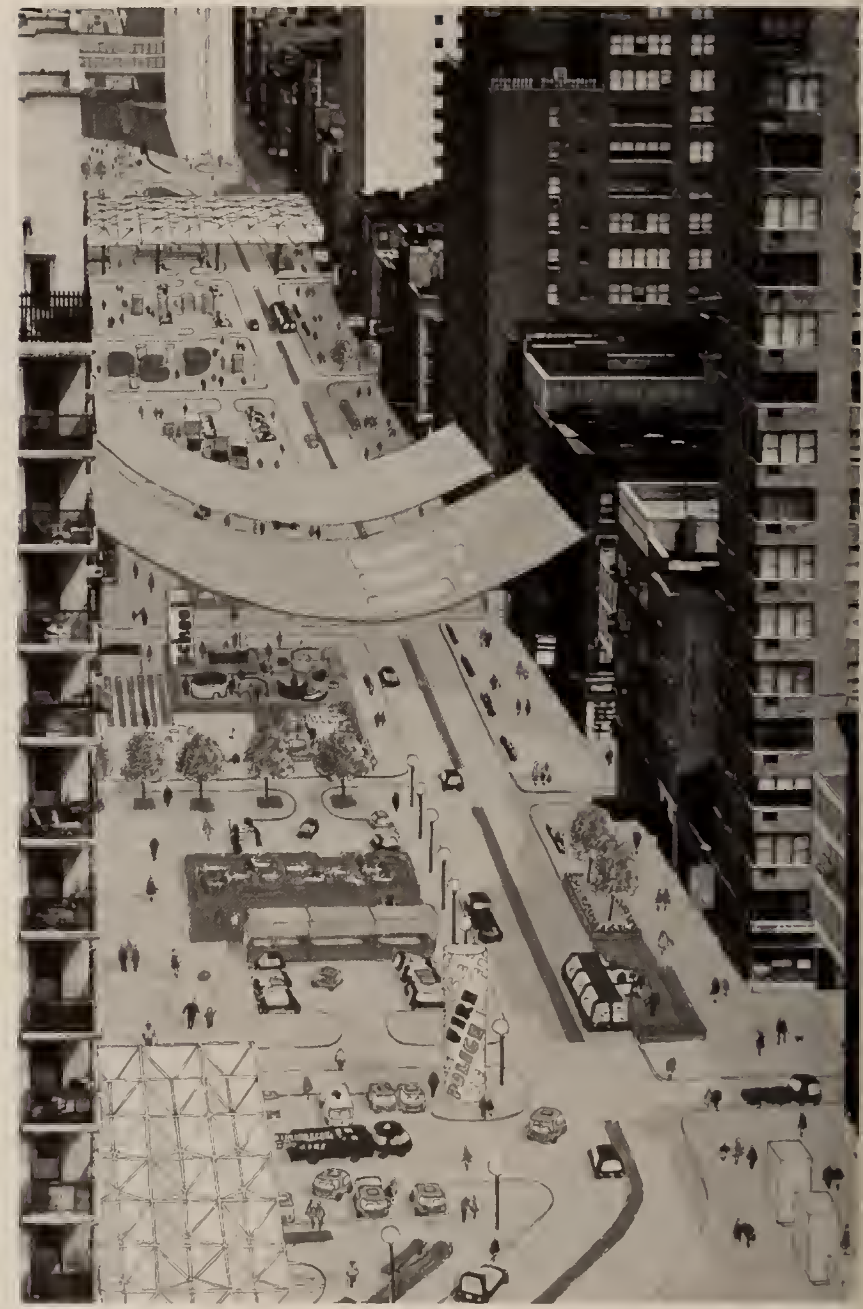
12 Proposed Avenue



13 Existing Avenue



14 Proposed Avenue



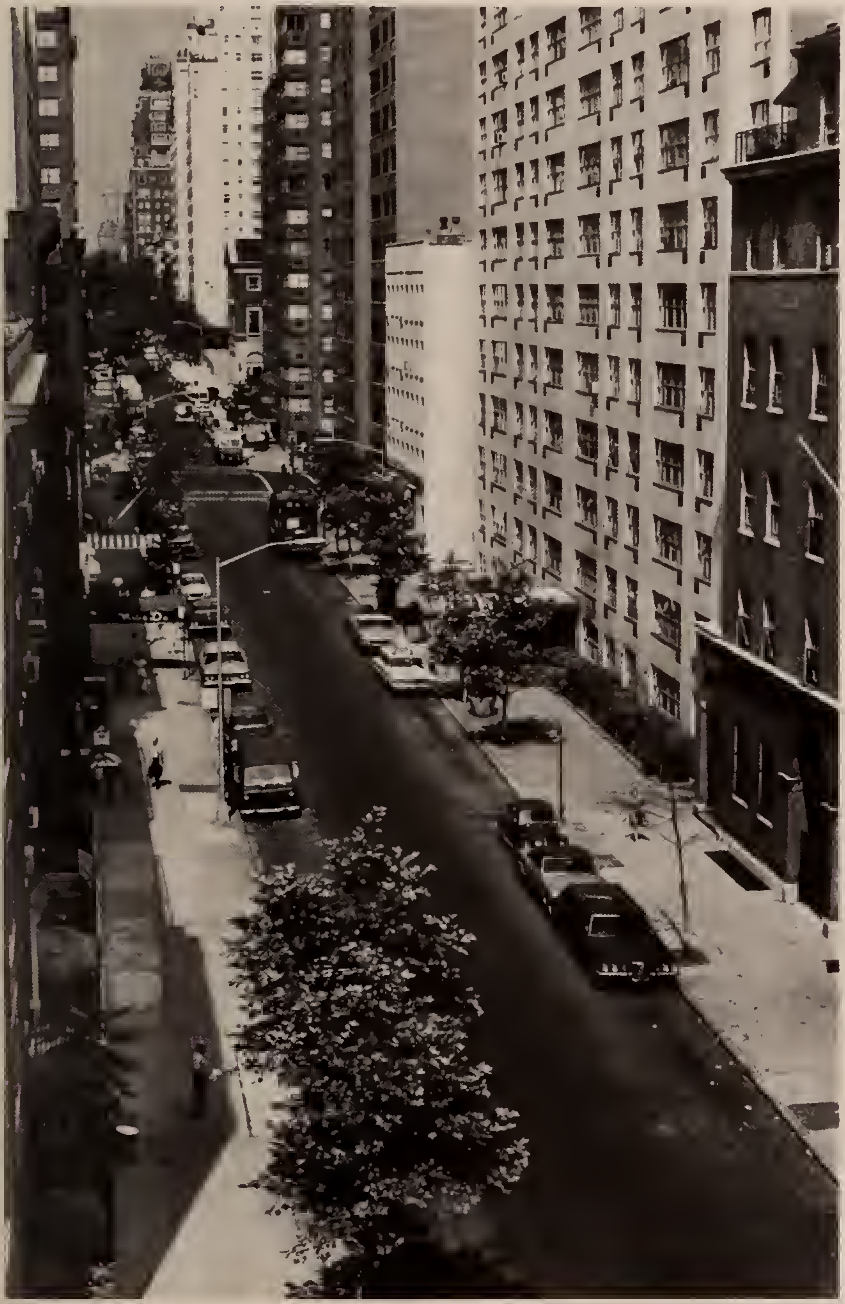
The Street (Figures 15, 16). The new people-oriented blocks are created by dead-ending east-west streets and using the roadway to serve the needs of residents. Existing buildings, former street rights-of-way, and pod lanes coexist. Within the cul-de-sac, small temporary stop areas are reserved for delivery trucks, taxis and rented pods. Pod lanes also serve as rights-of-way for emergency vehicles, which can traverse center-street parks in an emergency. Along the avenues, pod lanes connect to parking lots where pods are stored and recharged. All pods are rented by a time-ignition system. Thus, anyone may walk to the most convenient pod parking lot (usually at the end of his block), rent a pod and drive to any place within the study area or across the two bridges to the megastructure transportation center.

Each block becomes a separate entity serving its own residents and reserved primarily for their use and enjoyment. Through streets, for the most part, disappear. Activities for all residents bring people outside and into the space once dominated by the car.

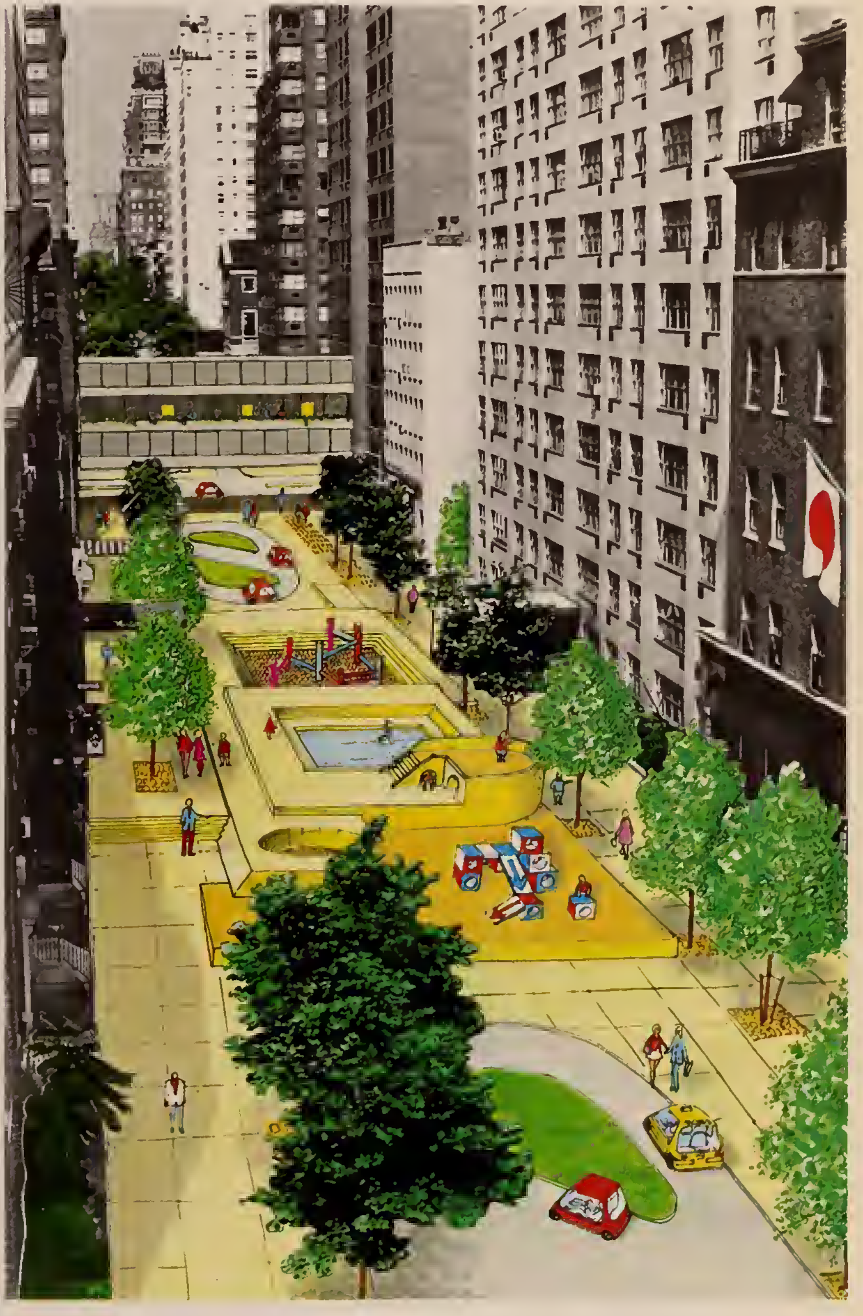
Blocks and streets gain identity through their own special park development, which would be controlled by residents' preferences. Some, for instance, could become playgrounds if a number of children live on the street; others might be used as sitting and sunning places when older people predominate. Restaurants are encouraged to add sidewalk cafés.

New buildings also close down the long vistas that now dominate most east-west streets. Each crosstown block is seen as an individual unit which contains spaces for new uses and specialized visual consideration. New structures are built above the street with open access at street level.

15 Existing Street

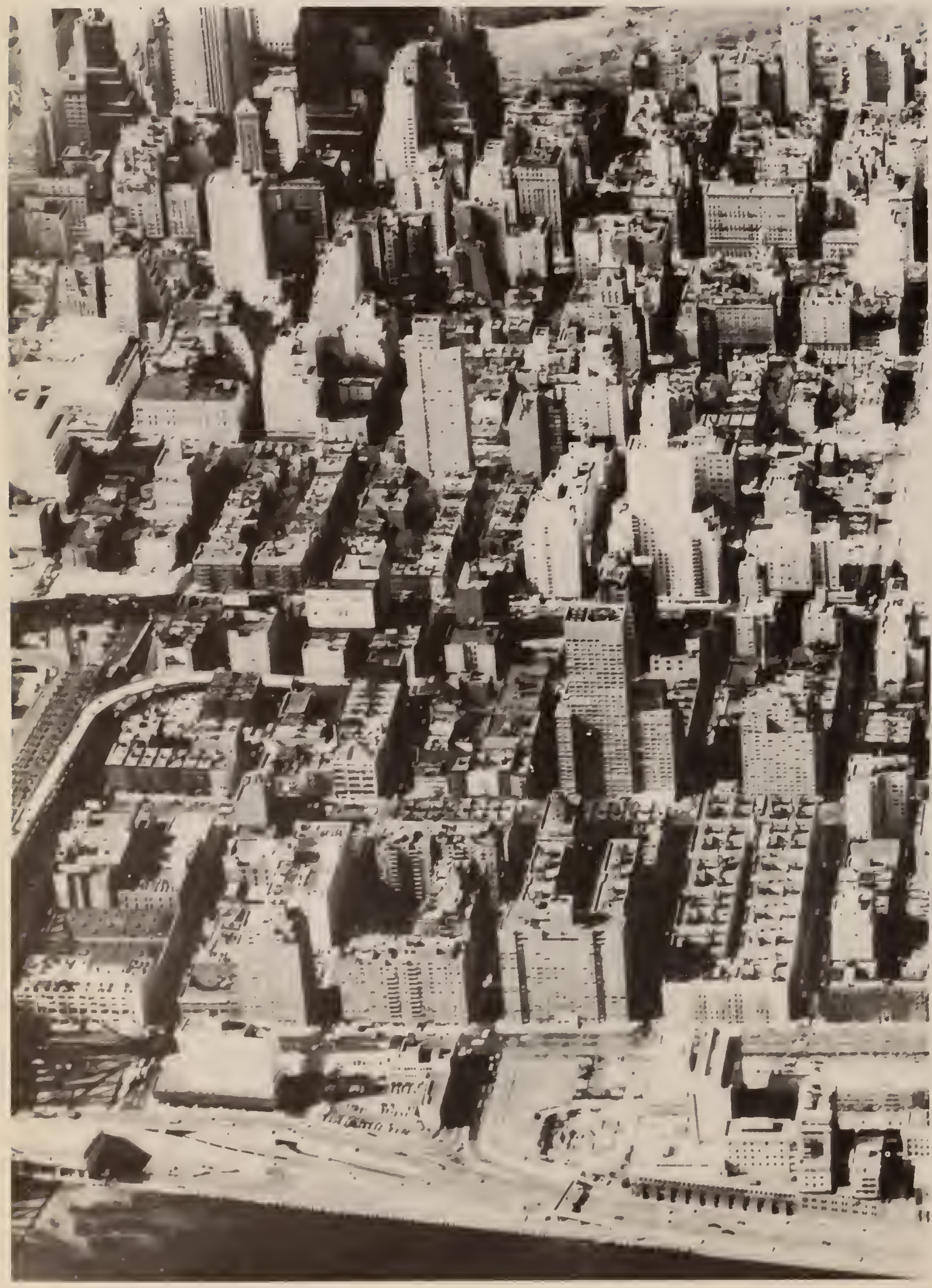


16 Proposed Street



Finger Parks (Figures 17, 18). The finger park is seen as a long-range goal. It would be built slowly, as properties became available. The shape would conform to that of the land available. Its basic direction, however, is east-west, to stimulate an awareness of setting and thereby provide a sense of place. Furthermore, access to the area's physical amenities, Central Park and the East River, is created. The finger park as diagrammed is intended only to demonstrate the methodology of the concept. A finger park is suggested from the Central Park Zoo to Rockefeller Institute along 63rd and 64th Streets. The meandering park, which is about half a block wide, terminates on the west at the Central Park Zoo administration building, and on the east at the tall new research tower of the Rockefeller Medical Institute. Near the zoo, many desirable buildings are kept within the new park zone. Their uses change to public activities, especially near the regional commercial center, where art galleries and small shops are logical. Near the East River, the park is used principally for field sports, tennis, swimming and passive recreation. A number of

17 The East 60's Existing Condition

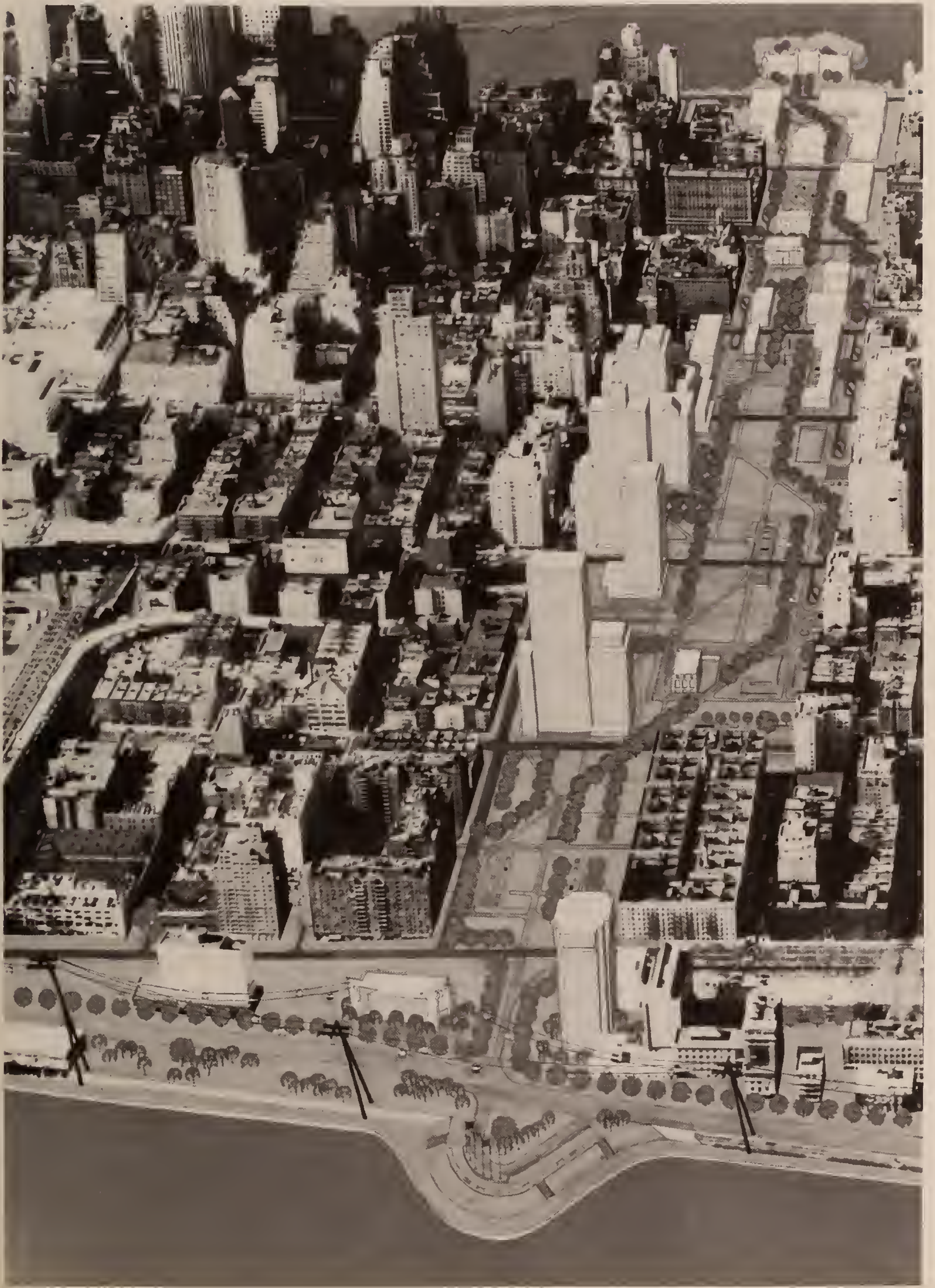


usable older buildings are kept as neighborhood libraries or community centers. Between First and York Avenues, a public garden with areas for rent or local use is provided. A skylift station is located where the finger park breaks through to the new River Park.

The various transportation systems—the pod vehicle and the caravan bus—traverse the park on 12-foot-wide lanes. They also enter the park at various places to service the public buildings. Pedestrian and bicycle paths are developed throughout. These lead from the zoo to the river and there link to a large promenade extending from Gracie Mansion to the United Nations Building.

A transportation interchange where three subways come together—63rd Street, Lexington Avenue and Second Avenue—is located within the park. A moving elevated pedestrian connector system links it with the various parts of the regional center. The specialty-shop and art-gallery areas of the regional center are located to entice strollers and shoppers from the large, active regional center into the park itself.

18 Finger Park in the East 60's



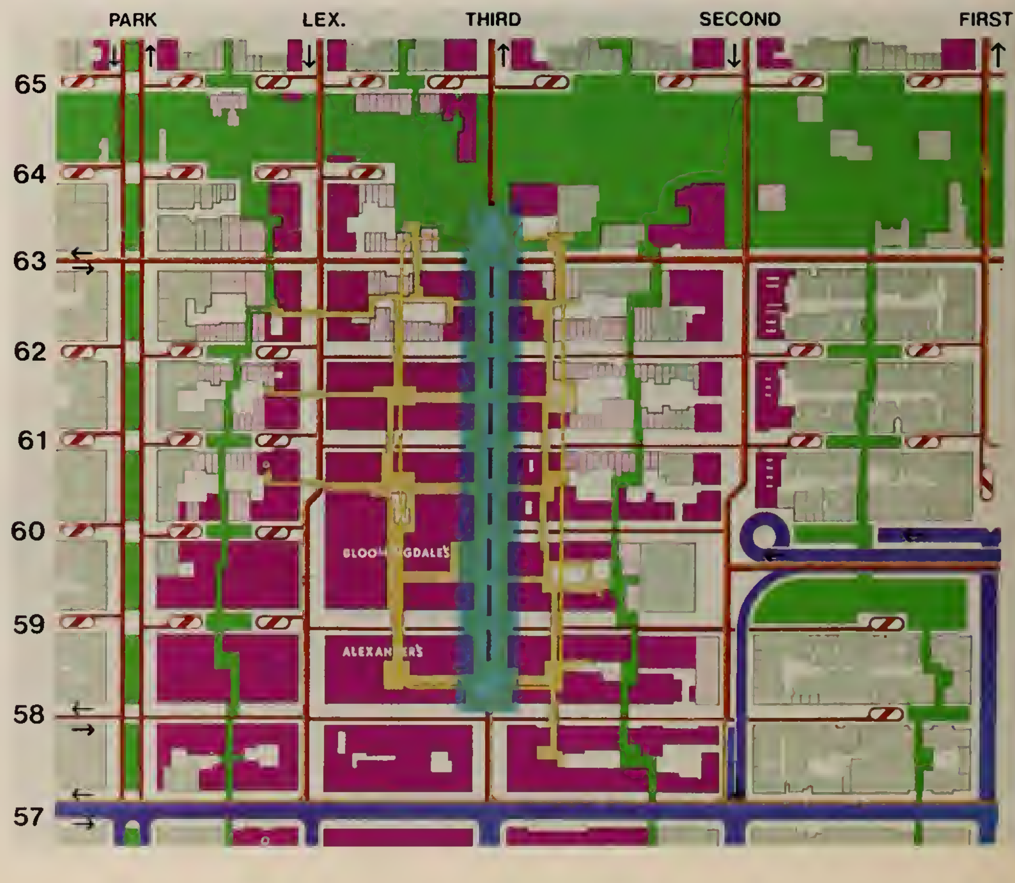
Regional Shopping and Commerce (Figures 19–21). A view of the regional center in plan illustrates all systems, transit types, levels of activity and land use. Existing commercial activity, existing buildings and expected commercial expansion are shown. Pod vehicles and caravan bus routes traverse the area. The southern boundary of the study area is 57th Street, where conventional vehicles, buses, trucks and cars continue to operate. They are not allowed to penetrate north of 57th Street except for access to the Queensboro Bridge ramps and the new Second Avenue Expressway tunnel.

In the regional center itself, the second floors of all the stores form an interlinked pedestrian concourse. This above-street-level network includes movement through stores and bridges across Lexington Avenue between 59th and 63rd Streets, and creates a pedestrian level above Third Avenue. In addition, a continuous moving glideway or small monorail system takes people through stores and around the shopping area in a complete loop at the third- and fourth-floor levels of the buildings. The pedestrian concourse and glideway levels are completely enclosed, well-lit and climate-controlled throughout the center. Convenient station stops are scattered within the regional center at the southern terminus within Alexander's department store, in Bloomingdale's, at the major transportation node to the north and on the eastern side of the regional center.

Along Third Avenue, running the length of the regional center, is a glass-covered, climate-controlled shopping concourse (Figure 21), created by roofing over, air conditioning and heating the pedestrian concourse above Third Avenue. Construction of an additional major department store, as well as specialty shops, theaters and restaurants, is expected within the regional center. Third Avenue has been chosen as the central spine because it is conveniently located midway between two transit lines and because it has already become the commercial center of gravity. There, the Lexington Avenue Subway and the new Second

19 Third Avenue Existing Condition

20 Proposed Regional Center

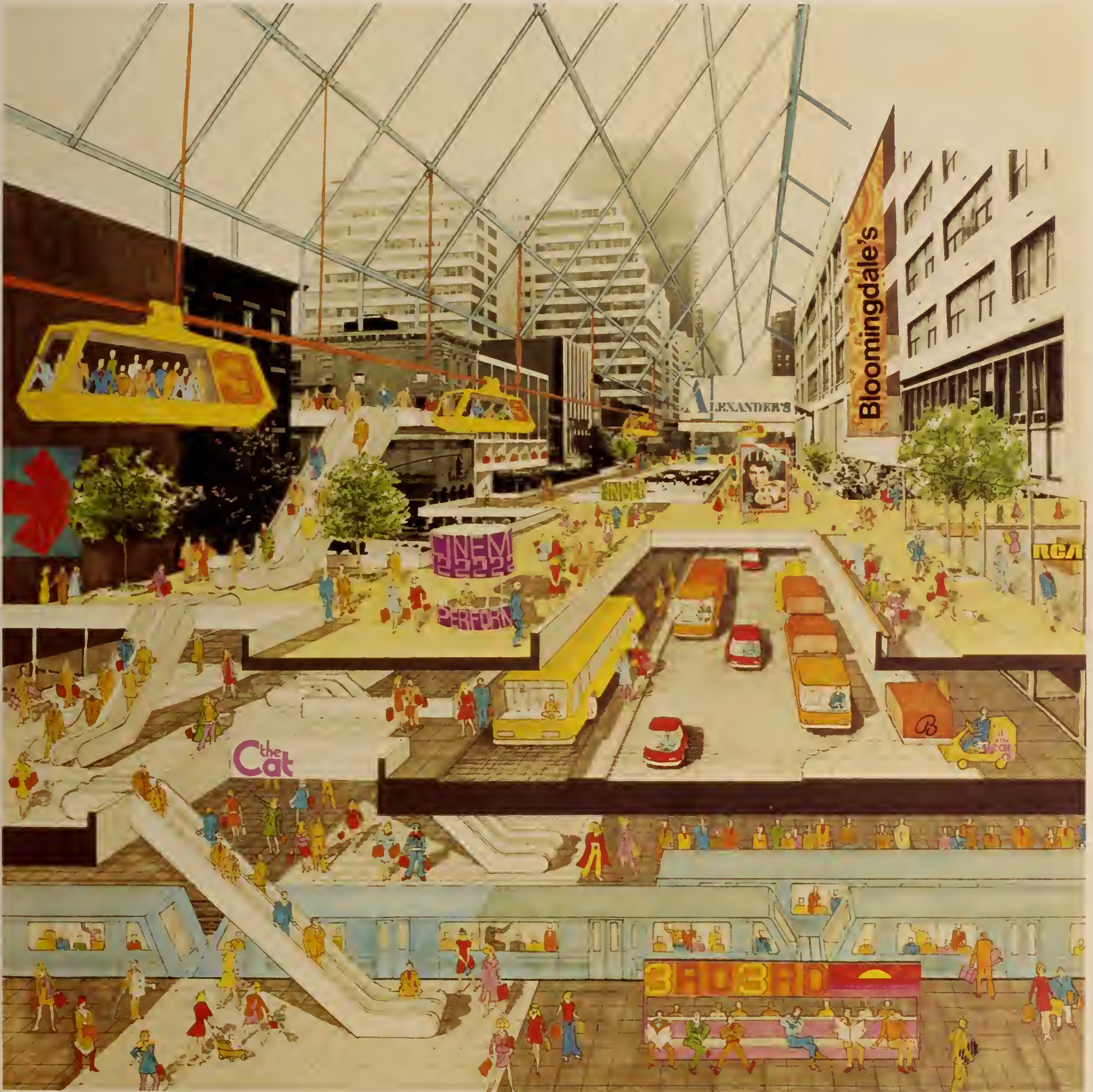


Avenue and 63rd Street Subways can be linked by a single concourse to create a point of linkage and interchange for passengers.

The pedestrian circulation system goes through the department stores and across Lexington Avenue. Then it traverses the back yards of nearby blocks, which are converted into boutique gardens. Here, small shops and stores which now face the street might also turn inward. These areas provide small, secluded, quiet back-yard enclaves where shops and cafés can survive because of linkage via the pedestrian bridge into the regional center. In this way, the regional center reaches out to encompass the surrounding blocks. The small-scale commercial use of recycled brownstones is intended also to provide a buffer zone between the large-scale regional center and its adjacent residential precincts.

A section through the enclosed Third Avenue portion of the regional center permits a comparison of the existing situation with the proposed systems and levels of circulation. At the top, the conveyor system or monorail carries shoppers through and around the regional center. At the next level, the second-floor level of existing buildings, is the pedestrian concourse, which traverses buildings and runs along Third Avenue. The street level is reserved for service vehicles, pod vehicles and caravan buses. Below the street, three subways come together. A series of escalators and elevators connects all levels. The entire development takes place in reclaimed street space now dominated by vehicular traffic.

21 Section Through the Enclosed Third Avenue Portion of the Regional Center



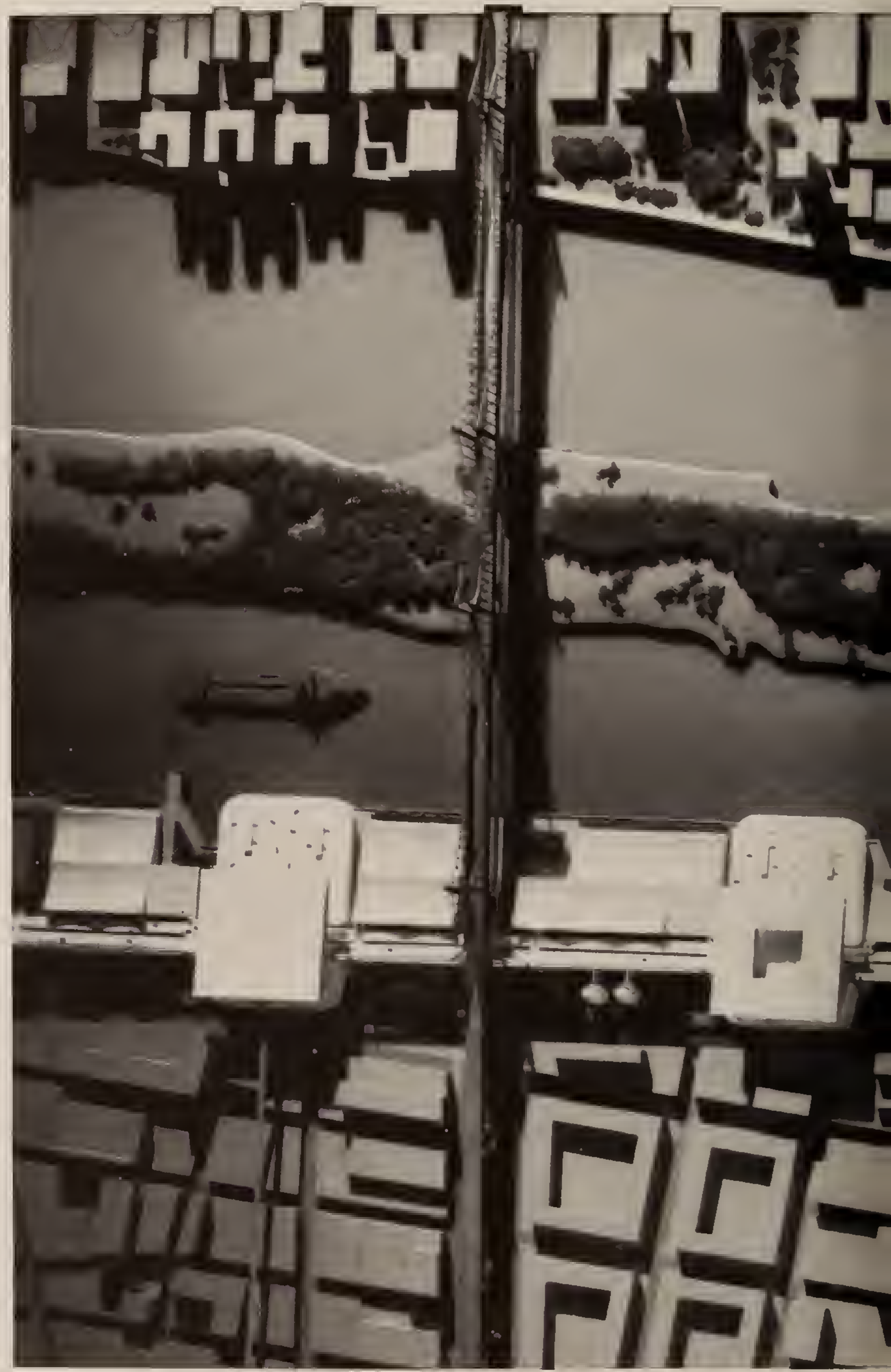
Queens Sector—Urban Support and Service Megastructure (Figures 22–25)

Along the east side of the East River a complex, multifunctional service structure combines efficient and modern transit, transport, and life support systems at a scale necessary to service the city. Storage space within it is used to collect conventional automobiles necessary for private interurban travel but inappropriate for intra-urban use.

Photographs of the megastructure model show the structure's length, depth and complexity. Running through it, a double-decked Manhattan bypass expressway carries trucks and buses on one level and private cars on another. Electric vehicles used in the Manhattan sector traverse the megastructure on their own rights-of-way.

Linked to the linear transport ways are nodes of concentrated development, elements of which serve as parking docks, each accommodating about 5000 cars. The cars are automatically

22 Service Megastructure (seen from above)

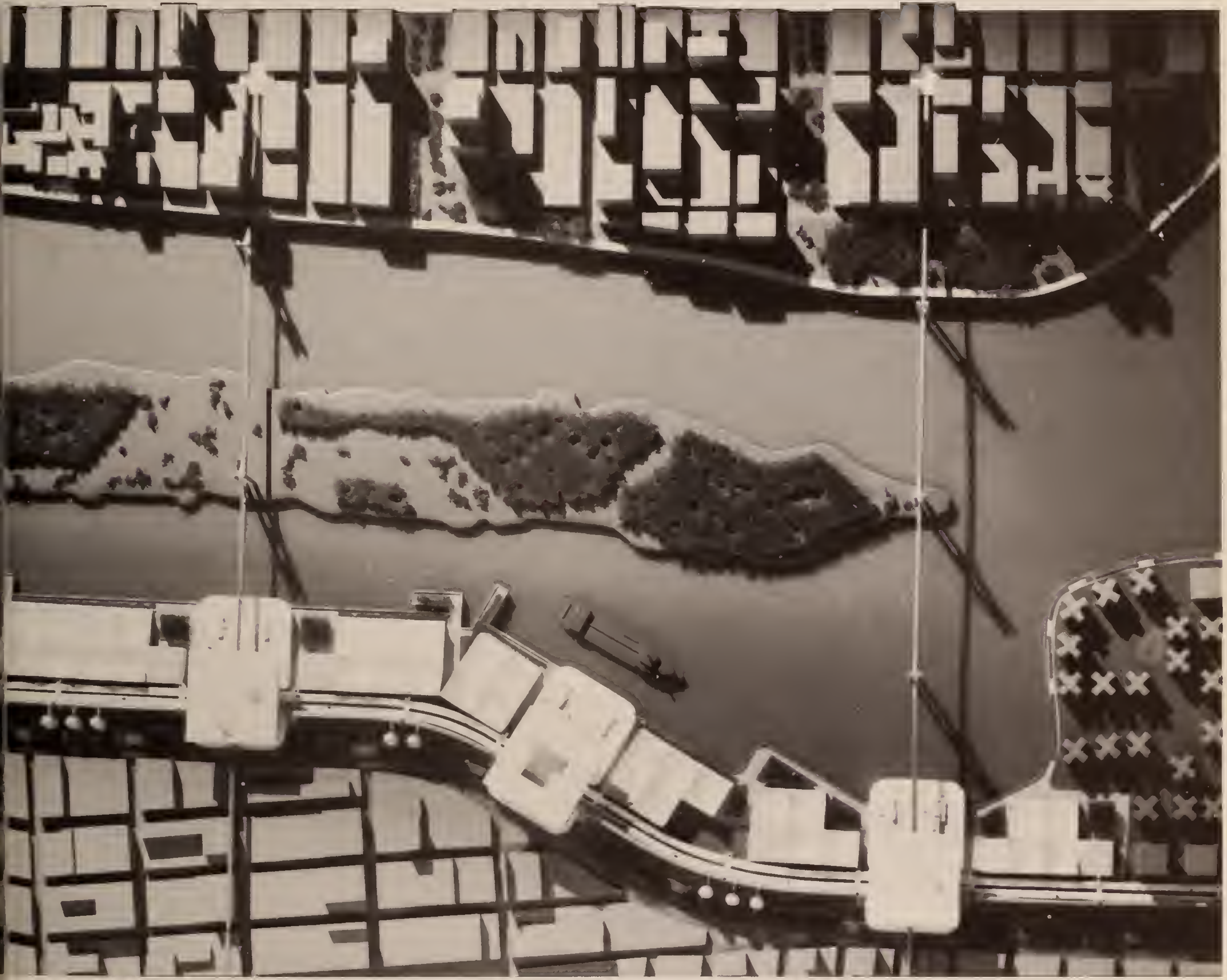


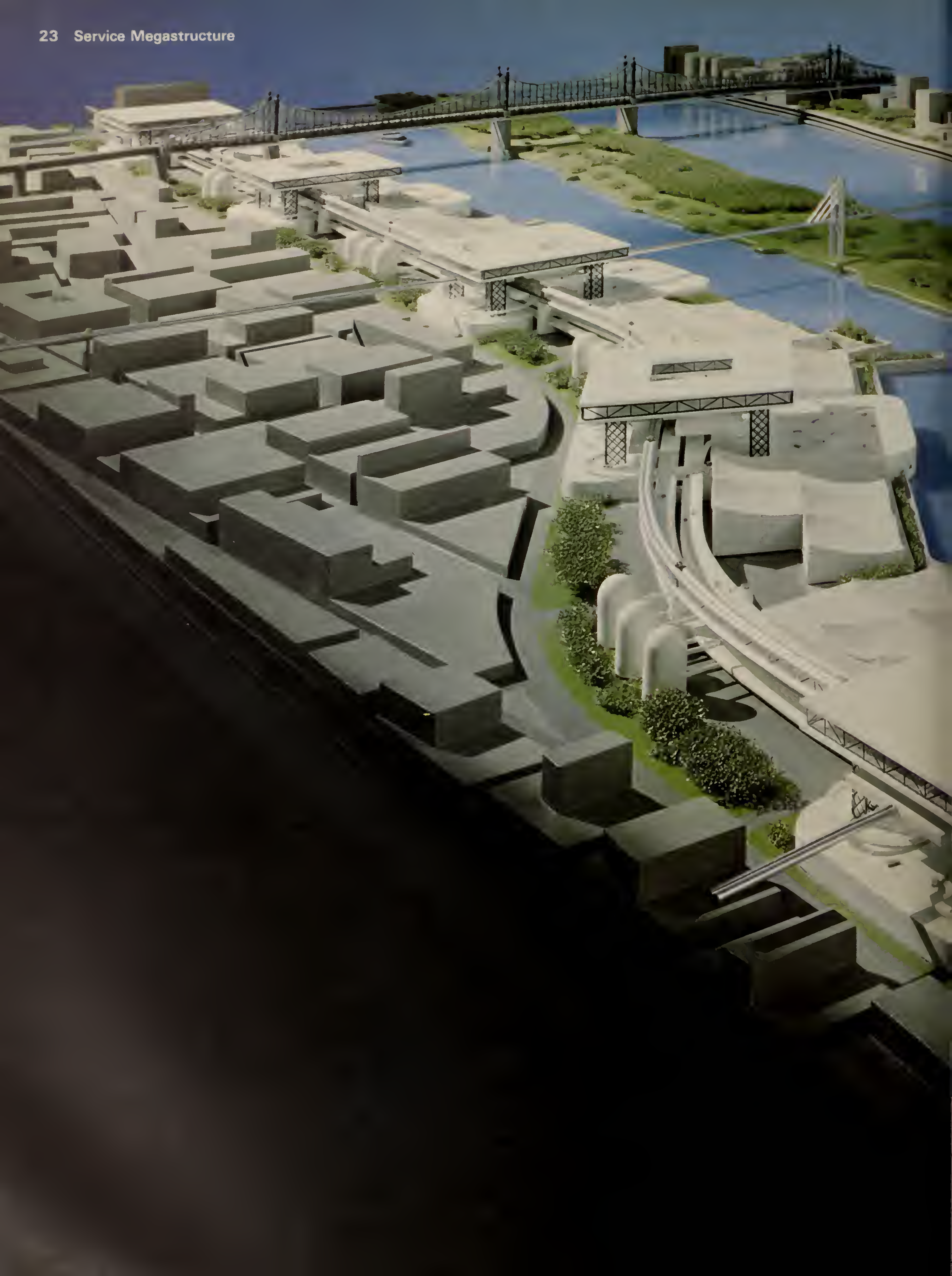
stored and retrieved by a mechanical system contained in the base of the enclosed structure. Ramps lead from the conventional vehicle expressway to the roof of the parking garages. Automobiles are lowered by the automated, mechanical elevators to parking areas below.

At each node or center, office and commercial space is available. Several nodes have roofs developed as takeoff/landing pads for VTOL or STOL interurban aircraft. Below one such pad, a major transportation center contains the New York regional station stop for the northeast corridor high-speed rail line now being developed to link the major cities between Washington and Boston.

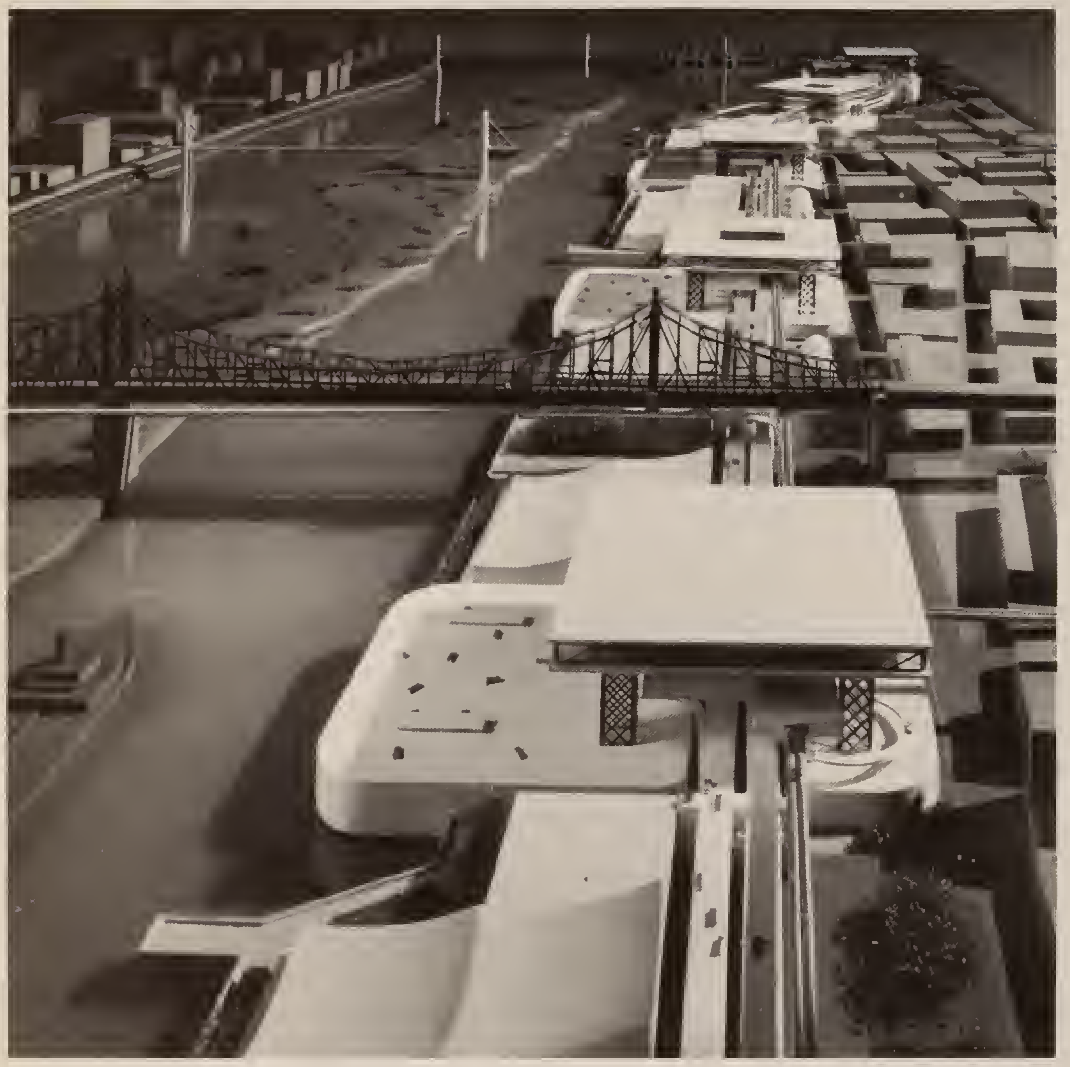
Between these principal centers, large-scale, low-rent loft spaces are provided for light manufacturing and commercial warehousing. This is an essential type of space whose scale is inappropriate for residential areas and which is currently in short supply near the central city.

Passageways through the megastructure are reserved for a

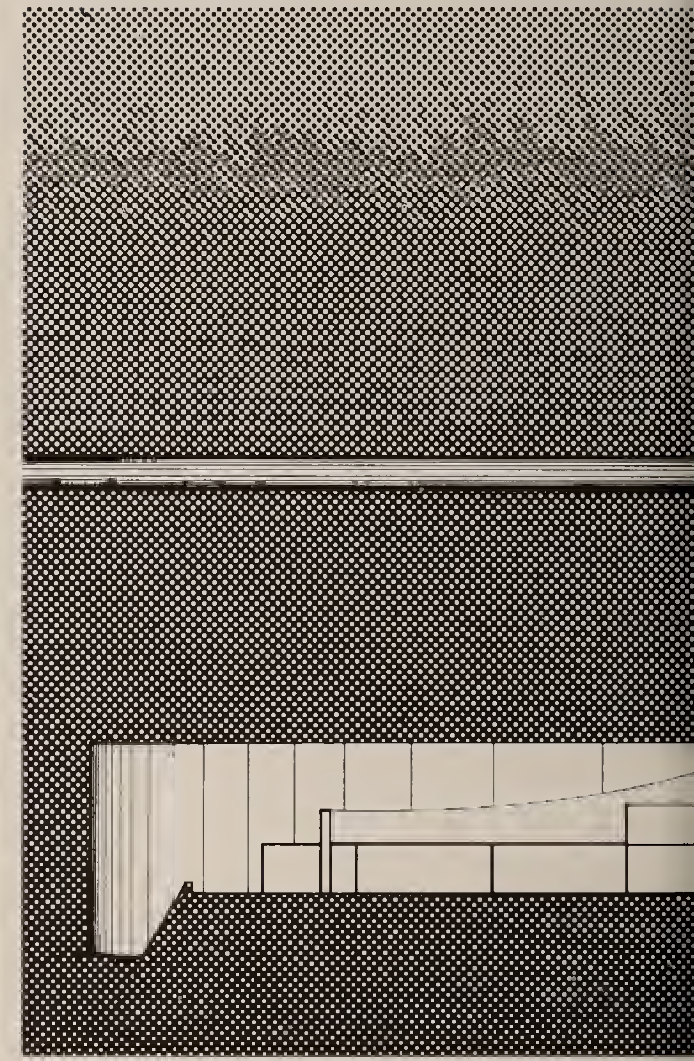




24 Service Megastructure (looking north)



25 Service Megastructure (cross-section)

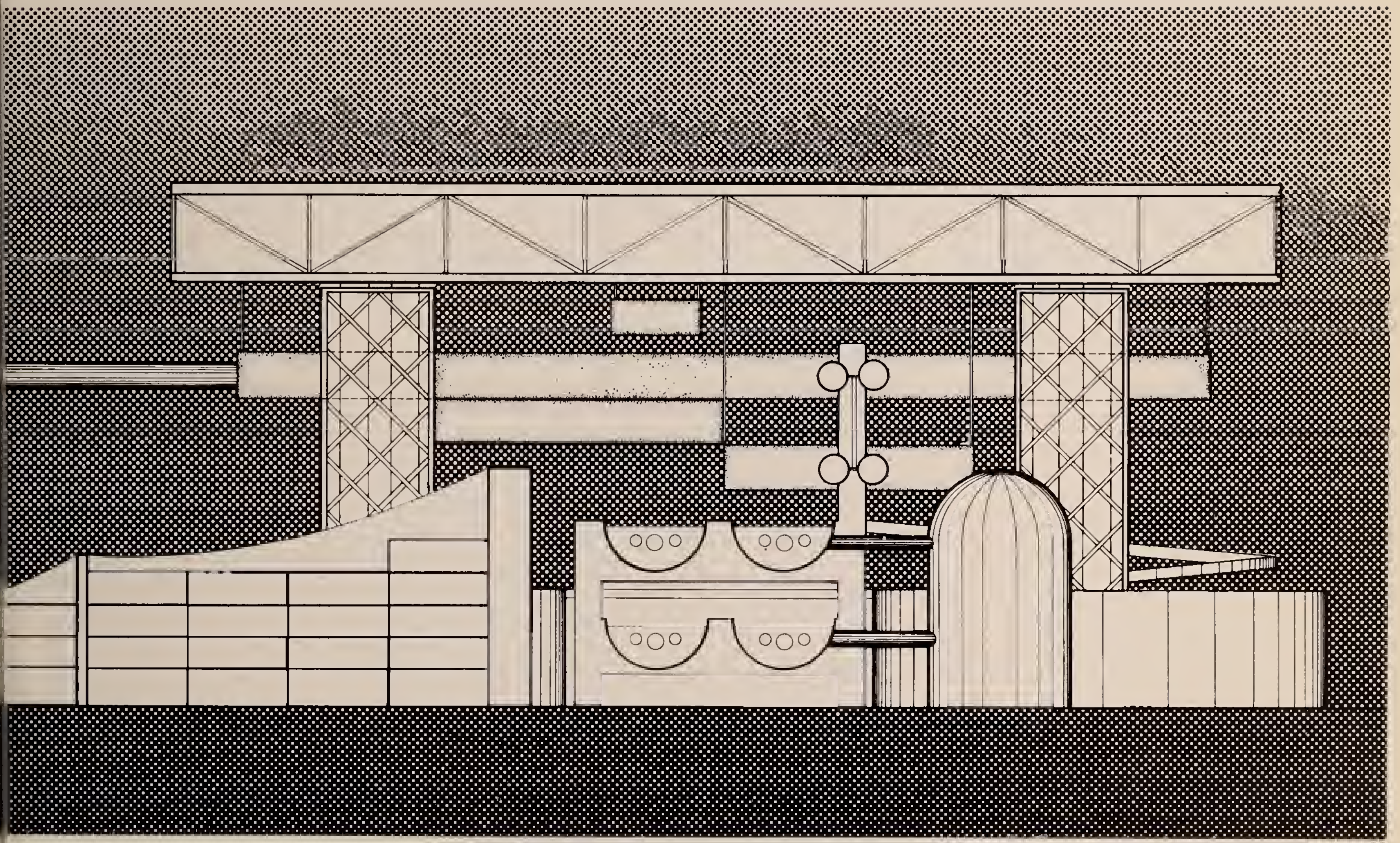


system of walkways and parks along the waterfront, creating a pedestrian promenade at the river's edge.

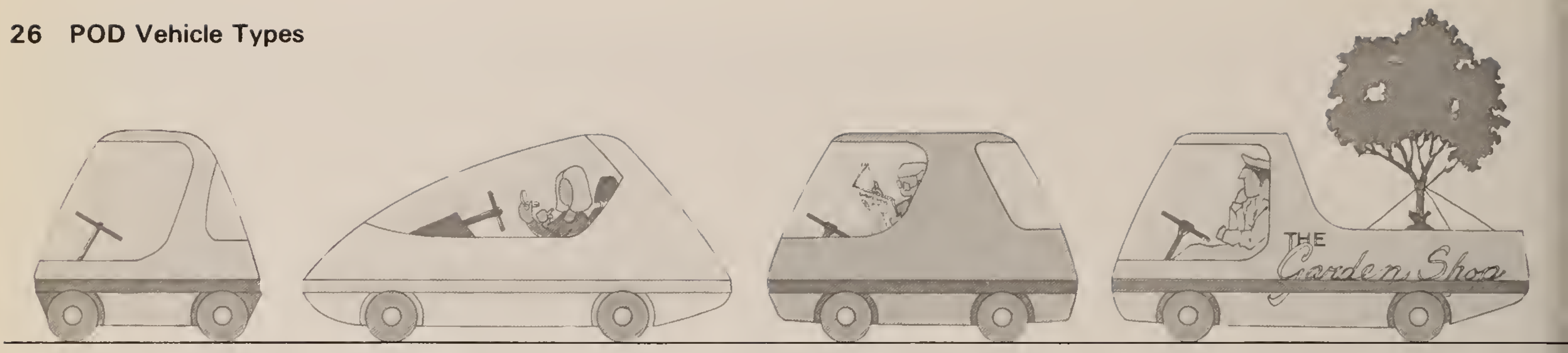
The cross-section diagram illustrates the superimposed levels of activity within the service structure.

At the street level, trucks and cars gain access to the warehouses and service and manufacturing buildings. Above this, a new Manhattan bypass expressway for cars, trucks and buses links the northern highways to Queens, Brooklyn, Long Island, Staten Island and New Jersey. At the next level, regional rail or monorail service between Boston and Washington passes through and stops within the structure. At the top, a roadway for pod vehicles connects all elements of the service megastructure and provides a link to Manhattan.

The garages are connected to all other elements by elevators housed in the piers of the megastructure. Waiting and terminal facilities are located to serve all public transportation and contain shared services such as restaurant, barber shop and newsstands.

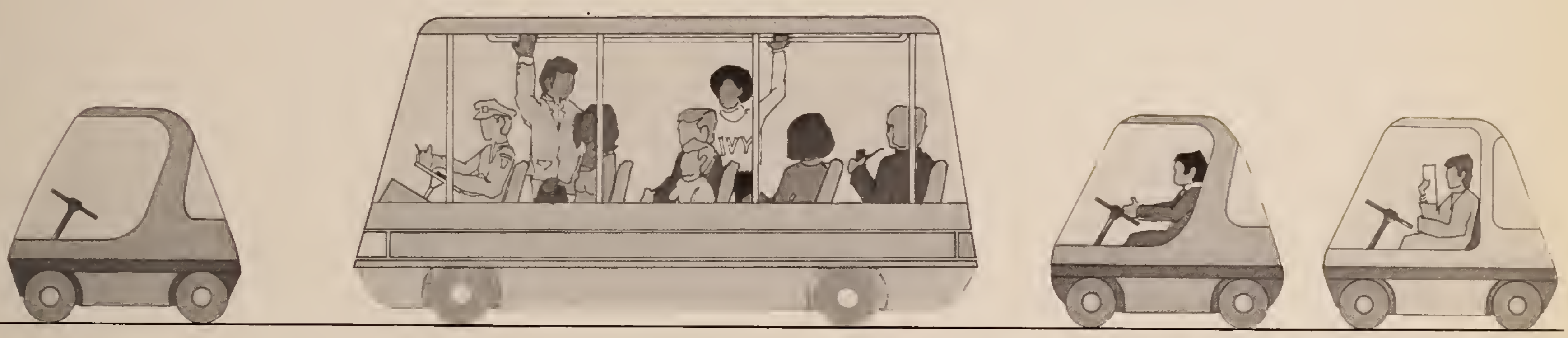


26 POD Vehicle Types

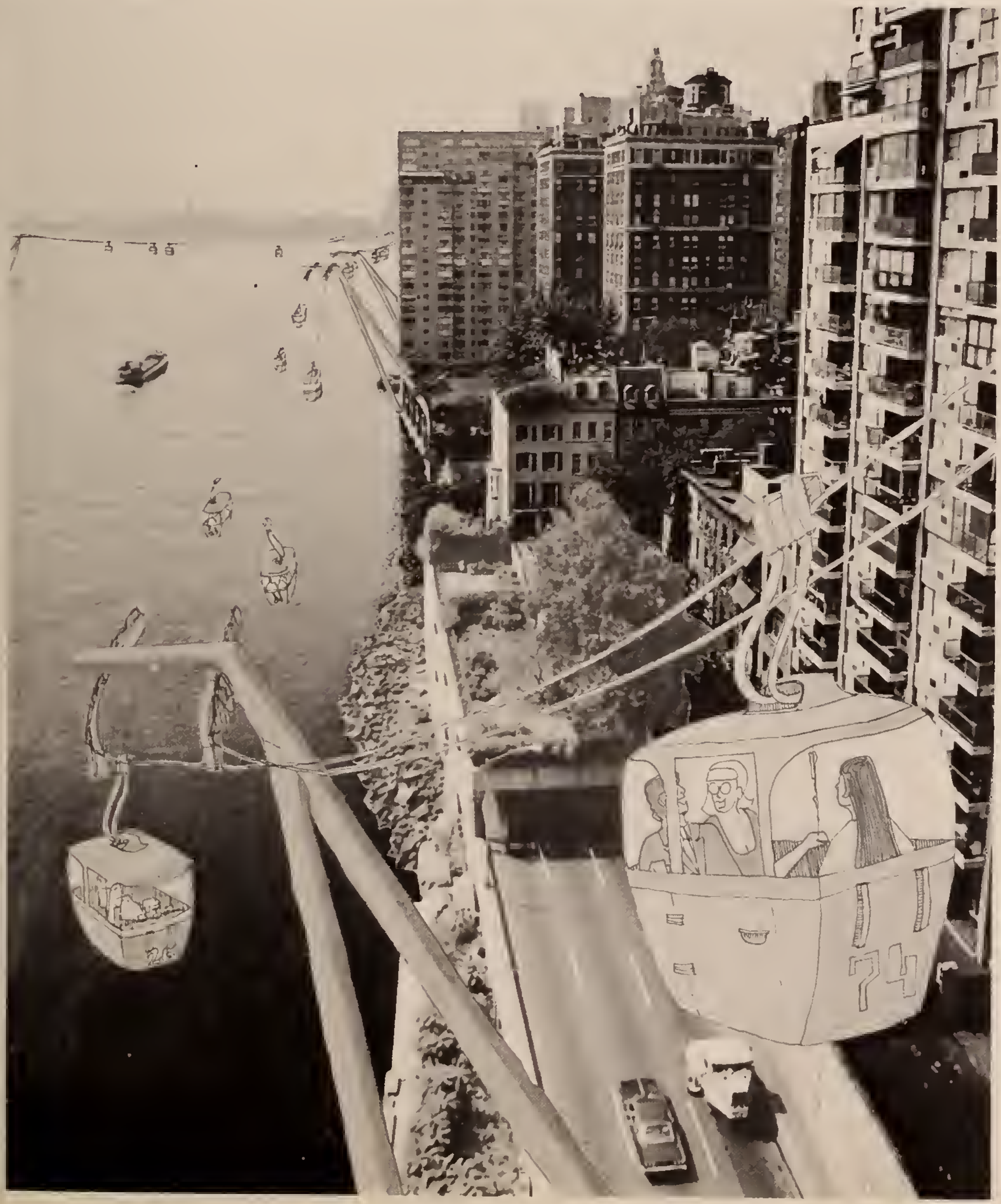


Transportation Devices (Figures 26, 27)

New "pod" transportation systems of the sort proposed in this study are already available. They deliver excellent service within limited areas without destroying the urban environment.
The skylift is much like a suspended gondola. It is intended to provide a visitor with an exciting ride around Manhattan and across the rivers and waterways. Routes include finger parks, river's edge, Roosevelt Island, the shore of Queens and the new urban support and service megastructure.



27 Gondola

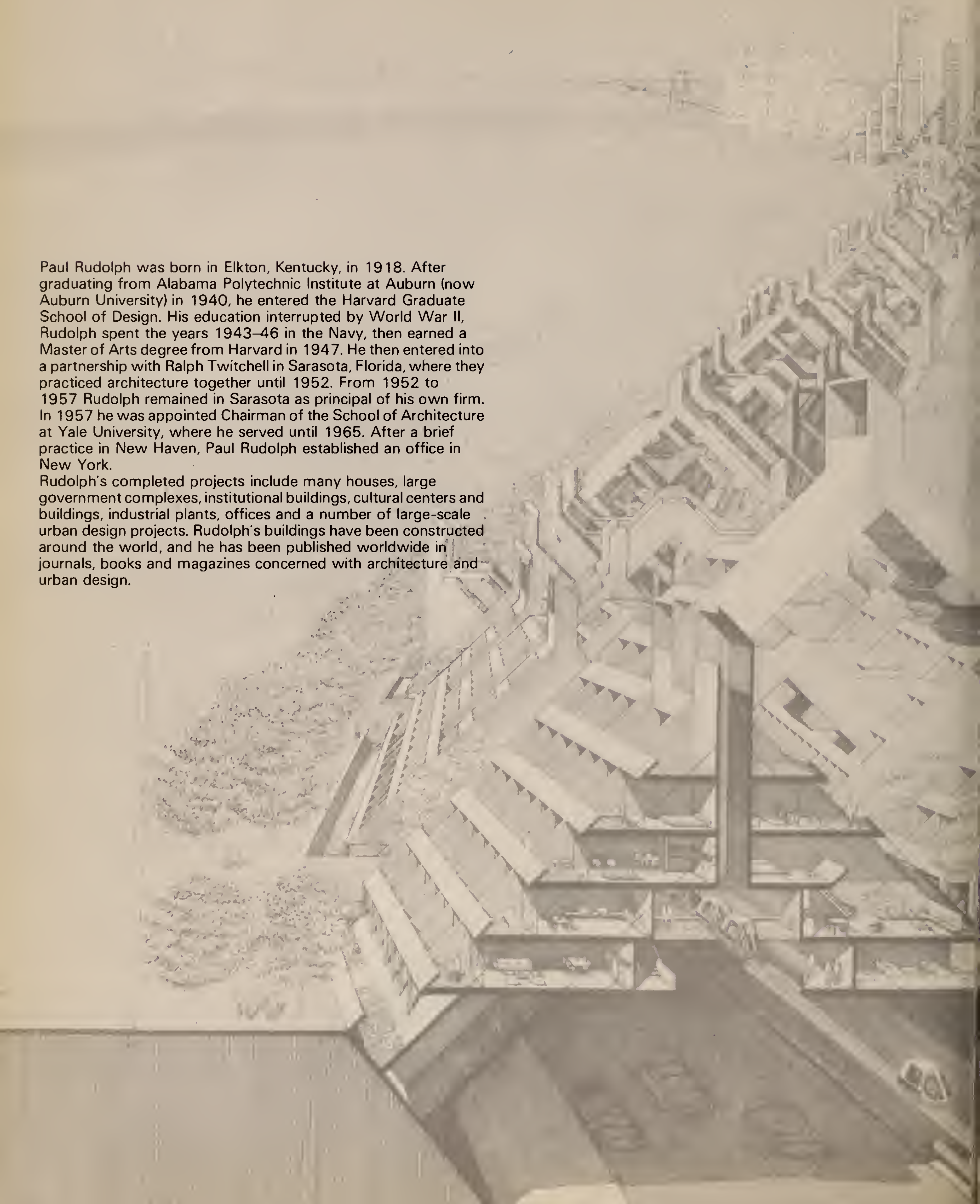


CITY CORRIDOR

PAUL RUDOLPH

Paul Rudolph was born in Elkton, Kentucky, in 1918. After graduating from Alabama Polytechnic Institute at Auburn (now Auburn University) in 1940, he entered the Harvard Graduate School of Design. His education interrupted by World War II, Rudolph spent the years 1943–46 in the Navy, then earned a Master of Arts degree from Harvard in 1947. He then entered into a partnership with Ralph Twitchell in Sarasota, Florida, where they practiced architecture together until 1952. From 1952 to 1957 Rudolph remained in Sarasota as principal of his own firm. In 1957 he was appointed Chairman of the School of Architecture at Yale University, where he served until 1965. After a brief practice in New Haven, Paul Rudolph established an office in New York.

Rudolph's completed projects include many houses, large government complexes, institutional buildings, cultural centers and buildings, industrial plants, offices and a number of large-scale urban design projects. Rudolph's buildings have been constructed around the world, and he has been published worldwide in journals, books and magazines concerned with architecture and urban design.



INTRODUCTION

Since the mid-1950's, new highways have been allowed to slash through cities, disrupt adjacent communities, and dissolve older districts. Automobiles using them create severe noise, fume and vibration impacts. In city after city the highway has become a channel of movement for through traffic but a barrier to community interaction and an inhibitor of local development and redevelopment.

In the late 1960's, when this project was launched, it looked as if an urban highway would indeed be built across lower Manhattan to link the United States mainland to Brooklyn, Queens and Long Island, via the Holland Tunnel, Manhattan Bridge and Williamsburg Bridge. The highway, designated on official city maps as the Lower Manhattan Expressway (LME), had for decades been viewed in politically dominant planning and engineering circles as a necessity.

Thus the given conditions were: a planned expressway route; an incredibly complicated and rich area in Lower Manhattan, through which it was expected to course; and the past urban atrocities which had accompanied the development of most urban highways links throughout the United States.

A principal intention of this urban design investigation is to suggest a new approach to city building, one which integrates transportation networks with the built environment. It suggests that as transportation networks of all kinds are planned, appropriate new building types must simultaneously be conceived both to reinforce the role of the transportation system itself as an organizing element and to provide connecting links to the existing city fabric. The simultaneous consideration of these generally physically alien yet mutually dependent concerns of the city—buildings for people and transportation for people—is seen to be the dominant 20th-century urban design potential—and one still not generally realized.

A secondary intention of this investigation is to seek ways that urban highway building can be turned around, turned into an advantage for the city, and especially for the affected adjacent community.

Out of these investigations comes the implicit suggestion that urban throughways and city transportation systems of all kinds should be recognized as a major generator of urban form, as meaningful—even fundamental—elements in urban design.

Even though the LME has now been demapped and its construction deferred, the need for an express link, especially for freight being trucked across Manhattan, remains. It has been determined that most of the traffic which clogs and disrupts downtown Manhattan is simply going from the mainland to Long Island. This unremitting urban-scale problem is one which continues to abuse the city. To cure this problem by building a conventional urban expressway might very well be more abusive to the city and its residents than doing nothing at all. On the other hand, building a new type of urban corridor designed in relation to the city districts through which it passes and engineered in such a way as to be capable of dissolving traffic and diminishing noise, exhaust, environmental and surface-street problems that have plagued the corridor area for decades might just be the most desirable approach. Its possibilities are investigated in the study which follows.

This proposal displays the approaches and potentials that reside within any urban highway corridor development. It depends upon understanding an expressway—or any transportation corridor—as a continuous volume of space in which the transportation system is but one potential and appropriate element. Its aim is to explore how such an intervention into the city fabric may avoid producing yet another well-documented and often-repeated disaster that has accompanied most such projects constructed over the last 20 years, and to show potential approaches and seminal ideas that could convert such interventions into an opportunity for nearby residents, for the highway impact area and for the city as a whole. It also seizes the necessity of a major public works project to propose some urban design organizing principles that could benefit the experience of the individual in the city and the visual-aesthetic quality of the city itself.

SUMMARY OF ISSUES AND IDEAS

Transportation as the Organizing Element (Figures 1–4)

Transportation systems in the 20th century take up a fantastic amount of space, especially in highly developed urban areas. We're slowly coming to realize that this space should be utilized in more than one way, for more than one purpose. To realize the opportunities occasioned by modern transportation routes, an awareness of three-dimensional potentials above and below the transportation line or route is essential.

It is too often forgotten that transportation systems in general, and throughways in particular, have replaced the plaza as the most potent single urban design element in a city scheme. Getting around, especially in the automobile but also in all sorts of other transportation systems, is the most common single experience we all have in cities. We don't recognize that reality well enough—and so the potential community amenity and urban design opportunity that could accompany this experience is usually ignored.

This proposal seeks ways to provide needed transportation systems of various sorts. It also suggests ways they can be provided without disrupting adjacent neighborhoods. It seeks to add to the amenities of downtown by making available more open public space and more enclosed buildable space. These spaces might house existing activities or provide opportunities for new ones to the existing community.

In this proposal, as described in detail and illustrated later, we understand "transportation" to include much more than the highway itself. Running throughout the corridor is a new people mover transit line for local service; parking wherever absolutely necessary but never placed to induce more traffic on the highway; innovative treatment of the interurban subway system utilizing vertical linkage through the multi-level scheme by escalators and elevators; and careful attention to pedestrian walks and spaces, both within the newly developed corridor and as connectors to the bordering neighborhoods.

All of the mechanical devices used to get people and goods from one place to another, along with pedestrian ways and spaces for the individual, need to be thought of as a single complex physical system placed within the urban space. Unfortunately, in most instances and throughout most cities, they exist today only as disjointed systems poorly related to the people, the buildings and even the fundamental functions they are expected to serve. It is this total system that is seen as the most potent—and generally most ignored—urban design tool.

Air Rights and Multi-level Urban Design (Figures 5–8)

The city is generally thought of as a flat base upon which buildings are constructed in majestic isolation from one another and from the remaining public space of the city. The leftover space becomes streets, sidewalks, and sometimes plazas.

This approach is too limited. It prevents solutions to many problems. When dealing with large-scale transportation systems in the urban situation this concept can only lead to the disastrous consequences which have been experienced in America throughout the highway building era. Enclosed private spaces, open public spaces and the transportation network should all be considered in a coherent three-dimensional, multi-level view of the city and should be designed together, whenever possible.

This alternative is evident, and in fact not new. There are, of course, examples of buildings which straddle the throughway or street. But the usual approach when buildings are placed over a street is to build platforms at specific and isolated locations. Our suggestion is to go further in a number of ways. Rather than using expensive platforms, we suggest in some instances making the buildings themselves become the covering deck. Also, we are interested in the whole corridor as an urban design entity, not just isolated spots.

The proposal involves the intensive use of both air rights and space beneath the surface through the Manhattan corridor. In special conditions, such as bridge approaches, it involves use of the space between the high surface of the bridge access ramps and the ground-level surface of the city. Throughout this proposal, centered as it is on a massive highway which weaves from the high bridge approaches over the East River to tunnels through parts of Manhattan, a thoroughly multilevel integrated design approach is maintained. Indeed, the main public spaces in the scheme, found at the transportation HUB and gateway building promenades, are many stories above land grade. At the HUB—some nine stories above grade—pedestrian ramps, major buildings and the transportation center all interact and are interrelated.

The great fluctuation in the elevation of the expressway results from our determination to have it perform its required functions without unnecessarily interrupting the life and community around it. It runs below most existing north-south streets. Over it at various levels along the route, new structures, spaces and pedestrian ramps and ways link the city to the corridor and provide for continuity in existing neighborhoods. The elevation of the road itself, combined with the nature of the city in each sector, determines what uses will be made of the space over, under and adjacent to the highway route.

Throughout the proposal, the corridor is envisioned as an elongated volume without edges, open and related to the city that surrounds it. In that great tube of space must run the highway at varying levels. Most of the volume, of course, remains available for other purposes. We propose a mixture of transportation services, amenities relevant to the existing community, and new uses of Lower Manhattan. In addition, along its open edges, the corridor is linked to and interpenetrated by adjacent building and space needs.

Zoning and the Multifunctional Building (Figures 9, 10)

Our prevailing concepts of single-use urban zones and single-use buildings need to be rethought. Both lead to an exclusiveness that is far too limiting and damaging to sensible city arrangement and convenient living arrangements. There needs to be a general reconsideration of zoning so that more efficient, more convenient multifunctional buildings and multi-use districts will be better understood and more often built. More choices should be made available.

Within the individual structure, a variety of uses leads to all sorts of gains. If offices and residential spaces, for instance, are combined in the same building, elevator shafts, fire stairs and the utility plant can be used over the whole 24-hour cycle.

Multifunctional structures should also be integrated with all aspects of the transportation network, including horizontal systems such as on-grade streets, people movers, pedestrian ways and subways, as well as vertical links by escalator and elevator.

The multi-use building type integrated with transportation systems is not really a new idea. In fact, the centuries-old Ponte Vecchio in Florence is one of the most attractive examples of such a building type. There, a pedestrian way and a road are flanked by shops and apartments. The whole road deck and mixed commercial-residential district form a complex bridge across the Arno River.

The multi-use building does not have to be concealed behind an undifferentiated façade which masks its diversity of uses and space types, as Mies van der Rohe preferred in his most eloquent buildings. His dwelling units were architecturally very much in the same spirit as his office buildings.

Historically, the dwelling unit has been expressed architecturally in a way that revealed its special internal program and its human scale. Throughout the history of architecture, especially in the vernacular building, the interior dimensions of dwelling units have been clear to an observer outside. One of the ways to humanize our increasingly large buildings is to reintroduce the visible appearance of the intimate scale of dwelling units within the larger multi-use building.

In this proposal, wherever possible, private outdoor spaces or terraces are introduced to the dwelling unit. This is done to present a "dwelling in the sky," a house in the sky as opposed to a series of cubicles in a huge monolithic building. One can, of course, question this amenity in terms of New York's noise and dirt problems. Perhaps the terrace will eventually be glassed in. However, it is also conceivable that city air will become cleaner. In addition, people seek a way to grow plants and to care for them, even in the most confined circumstances. The importance of this small hold on nature is given attention in the proposal's residential design. The terrace need not be thought of in a limited way: it is that bit of sought-after outdoor "turf" which is under the resident's own control.

The office or work area, on the other hand, needs to be very flexible. Work-area needs tend to change frequently. To satisfy this requirement, larger spans and more open space are important. Thus, work spaces something like the traditional loft-type building are suggested in this proposal.

Throughout the proposal, differing interior spatial demands of mixed-use buildings are articulated on the building exterior and satisfied in the arrangement of the interior. The two fundamental space types are thus integrated into a single building.

Architecturally, the intention is to clarify the essentially private nature of the dwelling unit, i. e., a series of relatively small rooms, as opposed to the essentially public nature of the office space, which must be designed to leave as much flexibility as possible.

The third type of generalized space that should be integrated into a multi-use building is storage space for automobiles. This type of unfinished, widespan space has yet another set of determinants based on the geometry of movement and on multiples of the automobile's length and width. It is distinctly another type, the third type of space that should be integrated into the 20th-century multifunctional building, as it is in this proposal.

In all of this, one must not exclude the special single-use building. We will always need the religious building, the sports building, the government building, etc. But these are really very special types of buildings which do not, for the most part, determine the general character and quality of the cityscape.

Building Systems (Figures 11, 12)

Today, construction is still generally undertaken as it always has been. A variety of separate trades coordinate the complex sequence of building at the site. In a post-industrial society, this approach is wasteful of human energy and of many people's time, and does not necessarily produce a better building.

An alternative is proposed in this scheme. The proposal is based on the belief that much of the assembly of building components should be completed off-site. Furthermore, these completed components, or modules, will come to be recognized as the 20th-century brick. The size of a room or even of a whole dwelling, the module will contain heating, plumbing, ventilation and electrical systems all bound up into it before it is combined with other modules on the site to form a complete multi-unit or multifunctional building. Approximately 80% of all building in the United States lends itself to modular construction. The residential module is applicable to housing, hotels, motels, hospitals and the like.

The office structure type has already been rationalized much more clearly than housing. Enough people have worked on office building systems so that today office construction is carried out with a high degree of sophistication. The industrialization of housing and related types of buildings which need smaller rooms and closed-off space is not nearly so far along.

The great exception is the mobile home, already a highly sophisticated module structure and, in certain terms, a highly successful one. For instance, about 45% of the total number of new dwellings sold for under $20,000 are now mobile homes, and the number is increasing.

The step from the mobile home to the module, however, has not yet been made. By module, this proposal suggests more than a unit which contains heating, plumbing, ventilating, electrical systems and even air conditioning, and that can be shipped down the road. It suggests a unit of construction that can be combined attractively and successfully with similar units, and which simultaneously satisfies national building standards and building codes, including fire ratings. There have been many efforts to produce a satisfactory and successful module, some of them highly sophisticated ones sufficiently comprehensive to involve the real questions of trade unions, political situations and financing. But none have really succeeded.

Certain criteria which define the module are already known. Its dimensions are determined by what can legally be shipped down one lane of a highway. This simple constraint limits the module to a width of 12–14 feet (depending on state law), a length of 60 feet and a height of about 11 feet. From these dimensional limits, all sorts of unfolding systems have been developed. The unfolding potential permits, for example, an unfolded double-width unit about 28 feet wide and 60 feet long. A space of that size permits almost any design opportunity needed for housing.

The use of unfolding elements to achieve terraces and larger rooms is incorporated into this proposal. One can predict that eventually this kind of unfolding architecture will emerge. One can say in principle that the stationary portions should include the mechanical systems used in kitchens, bathrooms and laundries, while the unfolding portions should be the freer spaces, such as living rooms, bedrooms and dining rooms.

The perfected module could also be used as the basic unit of an overall structural system. This proposal illustrates how such modules could be combined to cover great spans such as highway and rail rights-of-way. The costly mass of a covering deck could be avoided if a new building type composed of interconnected modules were available to serve the same purpose. The relatively wide 60- to 80-foot highway right-of-way could be spanned by a properly devised A-frame composed of linked modules.

Transportation Interchange: HUB (Figures 13–17)

In past eras, during the great days of port and railroad dominance of the urban economy, urban centers clustered tightly around the major accessways of the city. That rationale has generally been lost in this century, a period dominated by the automobile. Downtown has spread out and even disappeared in many cases. Tight clusters of conveniently located important public buildings have become diffused. Even when a major concentration of buildings is constructed due to new access (such as when a subway or highway is built), these buildings are not generally designed in conjunction with the physical opportunities presented by the transportation ways. They usually remain tied to transportation only as a visible economic opportunity upon which the developer may capitalize.

This proposal contains its own center, the HUB, which is the most complex area in the project. Containing the major public buildings, it is located, as it must logically be, at the intersection of all the transportation systems. The HUB is located near the Chrystie Street-Delancey Street intersection, which is also the intersection of the expressway corridors serving the Williamsburg and Manhattan Bridges, at the point where they join and course to the Holland Tunnel. In the same area, the existing BMT and IRT subway lines have stops and the IND subway line is not far away.

The fundamental idea of the HUB is to bring together all transportation systems—subways, the LME, local traffic, a people mover, pedestrian ways—and in turn to connect them with the elevator and escalator systems of the surrounding buildings and with public open spaces. The result is an interesting, effective and convenient large-scale interchange and complex of connected buildings and spaces on a very large scale that can be used conveniently and easily by people.

The HUB, in some ways, is thought of as a modern alternative to the plaza, which traditionally served as the city's gathering place. Generally, the plaza was public space surrounded by major public buildings, such as churches, government buildings and social places. Throughout the development of cities, the plaza acted very much as a base for those important buildings.

The 20th-century concept of the HUB is the opposite: it is a series of levels or platforms from which one senses the spaces going up and down, above and below one another. Architecturally and aesthetically, this is an entirely different experience than the solid, neutral one-level plaza which acts as the building base and gathering place. In this scheme, buildings not only go up—they also go down. The same is true, or could be true, of intensively used urban spaces defined by transportation ways. This is an increasingly popular 20th-century idea, but one not often realized in urban design. From an architectural-aesthetic point of view, this multilayering and bringing together of many different scales, including vertical movement by elevator, will develop into one of the truly great 20th-century urban forms. To express this approach and conviction the subway is brought out into the open and at another level the expressway itself is revealed, together with the people mover and pedestrian walks, all at the HUB.

A part of the aesthetic experience contemplated in this proposal can be had today in an unplanned example: the East River Drive in New York City. There, driving along the river, going under the enclosures, looking through the kaleidoscope created by the supports, turning, coming out from an enclosure only to go back into another enclosure, the light, the dark, making yet another turn, the United Nations building coming into full view—that's an exciting 20th-century sequence of space which we don't understand very well. At the East River Drive this sequence just happened. At the HUB, its possibilities are exploited. This kind of spatial experience, linked to the experience of motion through an urban context, holds the possibility of producing one of the few first-rate 20th-century spatial and urban design experiences.

The HUB is also an area of great use, not just of experience and interchange. It can function as an extension of nearby existing institutional, educational and commercial activities. Office space and housing are integrated into the scheme. The HUB becomes a resource provided to both the community and the city as an adjunct to the entire transportation system, which is itself exploited for both convenience and enjoyment.

Preservation and the Environment (Figures 18, 19)

One of the greatest problems created by expressways is environmental harm in terms of noise, smell and visual interruption. An expressway also generally violates the scale and fabric of the city through which it is cut. In many big urban highways also destroy precious districts and buildings of great quality in themselves, or districts which have an unusual quality as a grouping of structures and spaces.

This proposal tries to overcome all of these problems, even though the LME as conventionally proposed by engineers through the last several decades would in fact have been destructive to the environment, to the scale of the city around it, and unfortunately to the fine cast-iron façades and buildings along the proposed route, expecially in the vicinity of Broome Street.

In this proposal the highway is generally below ground except along bridge approaches. This helps fume and noise control. The scale of the surrounding city is taken as a guide in massing the architecture along the corridor. One can say, with some exceptions, that the intention has been that if nearby buildings are relatively tall, the buildings along the expressway are relatively tall. (Bridges can, of course, be seen as rather tall buildings.) Where the highway traverses a low district, such as along Broome Street, buildings of low scale are proposed. So even though our proposed structural system lends an unusual appearance to the buildings, the scale of the buildings is in fact related to the city which would surround them, and of which they would become a part. The topography of the architecture by and large springs from the topography of the surrounding cityscape.

There is, additionally, the intention of providing spaces in these new structures into which existing community and neighborhood activities may find room to expand. Housing, public and semi-public facilities could all provide physical and social continuity within this neighborhood without permanent interruption by the expressway.

In the original official plan, the LME went right down the center of Broome Street, obliterating the fine cast-iron façades on both sides of the street and destroying a coherent district. There are other plans to slightly modify the route, tearing down the south side of Broome Street and leaving the north side, where most of the good buildings are clustered. But then these rather delicate remaining buildings would be facing a wide swath of concrete, a highly unfortunate and really unsatisfactory situation.

This proposal saves both sides of the street. It recognizes that the character of the street is given not just by individual buildings but by the length, width and character of the street itself. This approach is made possible by altering the originally planned right-of-way somewhat so that it runs below grade down the centers of the blocks, not down the street right-of-way. At the center of the block, there is little that would be destroyed. Even if some of the backs of the buildings had to be altered, this approach would preserve the coherence of the cast-iron façades of the loft and mercantile buildings along Broome Street itself.

Topographic Architecture and Hierarchy of Building Types
(Figures 20–22)

We desperately need contemporary ideas regarding the organization of cities—that is, urban design. The *Ecole des Beaux Arts* geometric notions have been outworn and the ideas of the Bauhaus were quite meager when it came to urban design. Based on Bauhaus precepts, the great European architects of this century by and large followed Le Corbusier's example of the huge building in the park. Transportation was generally not integrated into the building complex as an urban design organizing principle. There were some exceptions to this, Le Corbusier's notable project for Algiers being one of them. But by and large most of our 20th-century notions for urban design have not proven to be very fruitful. Zoning presumptions, changing emphasis in building types, haphazard plot-by-plot development and redevelopment, and totally diverse structural systems have all lent to making the evolutionary development of the city increasingly chaotic.

As an alternative, the notion of topographic architecture suggests that building scale, bulk and sequence can be used to create a topographic condition that is meaningful both to overall urban arrangement and to activities which occur at specific points.

Historically, a commonly accepted hierarchy of building types helped explain and create the organization of our cities. At the center was the tallest building, generally the church. Next, institutional and governmental buildings were distinguished by their height, bulk and design. Finally, at the smallest scale, residential and mixed residential-commercial districts were apparent.

Today, we have lost this way to organize and understand the city. The largest buildings tend to be office buildings or factories, places of work in general. This has rendered the traditional hierarchy of building types completely impotent. The shift has to do with the demands of society in general, and we can't change that. But we can humanize it, and we can incorporate the ideas of a new hierarchy of building types into urban design. One of the most important changes is to incorporate the intimate residential scale into larger multi-use and multipurpose buildings. With a new order and the development of more complex building types, the opportunities for both hierarchic arrangement and topographic architecture re-emerge as promising urban design concepts.

As stated earlier, it is the thesis of this proposal that transportation systems in all their manifestations are the prime generating force of urban design. When several systems come together, they form "hubs," great generating forces for urban activity. What happens above and below such systems, throughout their corridors, could be defined by a purposeful topographic architecture. In this proposal buildings, through the modulation of their scale, form hills and valleys rather than standing free in meaningless juxtaposition. The hills signify locations of intensive use or special symbolic importance and the valleys indicate areas of less intensive uses or places of calm. Thus, at the bridge approaches, the gateway to the city, the ceremony of entering which traditionally received great attention in urban design is again expressed by the continuous massing of tall structures.

Another place that topographic architecture and a hierarchy of building types has traditionally been expressed and needs to be reasserted is the center. The center needs to be announced from great distances. At the center, where the transportation arteries intersect, there is good reason to suggest intense development. The natural bulk of a large amount of enclosed space at the center justifies higher buildings and greater concentrations, as shown at the HUB.

THE PROPOSAL

The Study Area (Figures 1, 2)

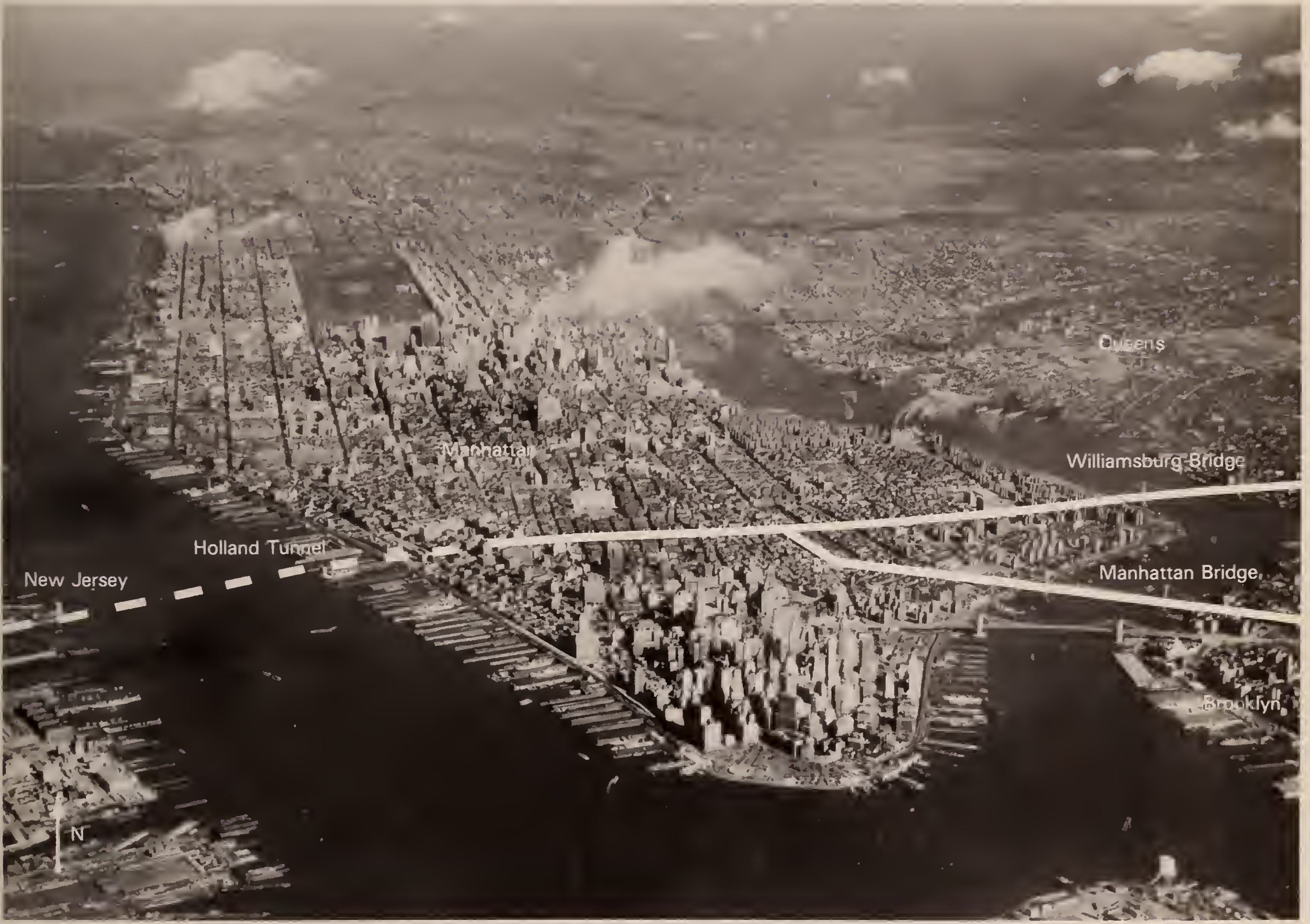
The study area is a Y-shaped and for the most part linear corridor one to two blocks wide, which traverses lower Manhattan from east to west (Figure 1). The corridor links the existing Holland Tunnel and the Williamsburg and Manhattan Bridges to one another. Thus, it connects New Jersey, Queens and Brooklyn to one another across Manhattan Island. No redevelopment of the bridges or tunnel is suggested; existing ramps and rights-of-way are used. On the whole, through north-south streets remain. Pedestrian ways link new development within the corridor to surrounding districts.

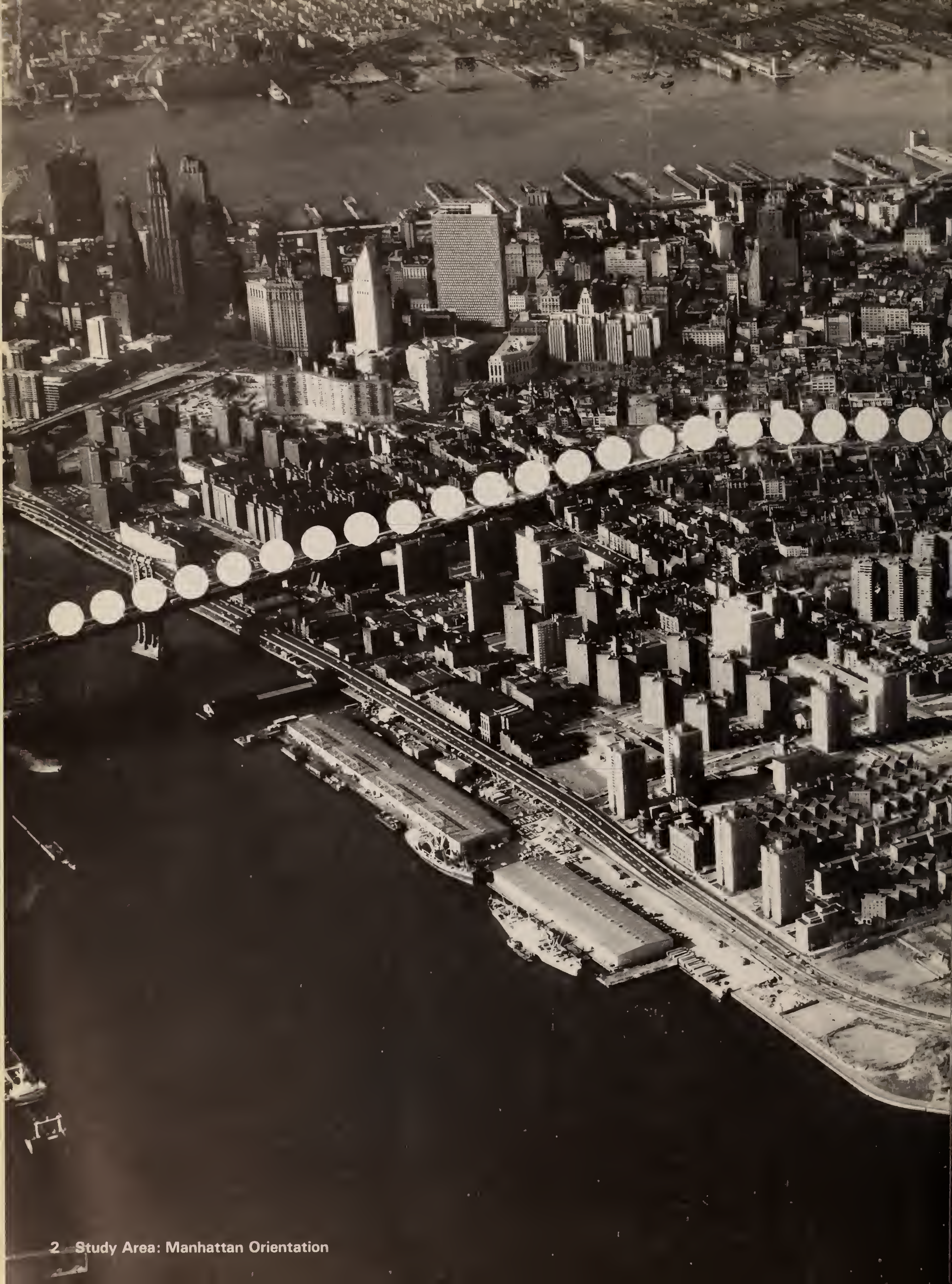
The western segment of the study area runs, for the most part, in midblock between Broome and Spring Streets. The northeastern leg of the corridor includes the Williamsburg Bridge approaches and parts of Delancey Street. The southeastern link includes The Bowery and Chrystie Street on the inland side of the Manhattan Bridge approach ramps. At the intersection of all three segments of the corridor is the HUB, centered on Chrystie and Delancey Streets, with the northern boundary just south of Prince Street, the southern boundary just south of Delancey Street, the eastern edge at Allen Street and the western boundary at Elizabeth Street (Figure 2).

The present character of the corridor ranges from active, mixed residential-commercial neighborhoods to underutilized light industrial districts mixed with some loft-type housing. Along the Williamsburg and Brooklyn Bridge approaches, which become very important and highly developed parts of the study area, there is currently little development. Similarly, the approaches to the Holland Tunnel, now open, wasted areas in the city, are recognized as new opportunities.

Throughout this corridor, primarily due to heavy commercial truck traffic, street congestion is commonplace throughout the work week. Truck noise and exhaust create an unpleasant and unhealthy condition. The existing housing stock is, for the most part, old and in many instances inadequate. Currently, full advantage of exceptional river views is rarely seized by housing in this part of Manhattan.

1 Study Area: Regional Orientation



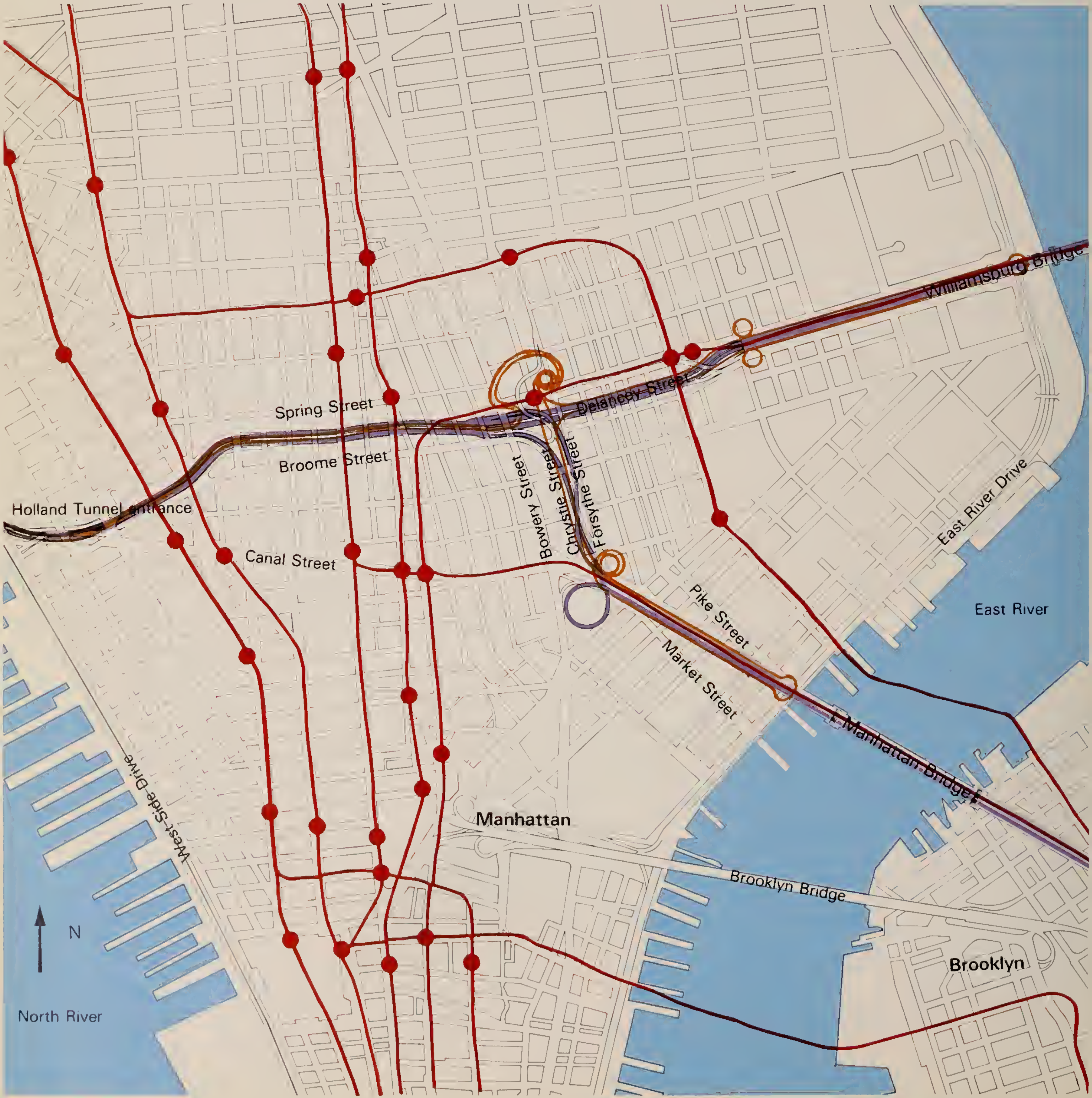


Transportation as Organizing Element (Figures 3, 4)

Key for Figures 3 and 4:

- ▤ existing grade streets
- 🟥 existing subway routes
- 🟧 proposed people mover system
- 🟪 proposed expressway route

3 Study Area: Existing and Proposed Transportation Network



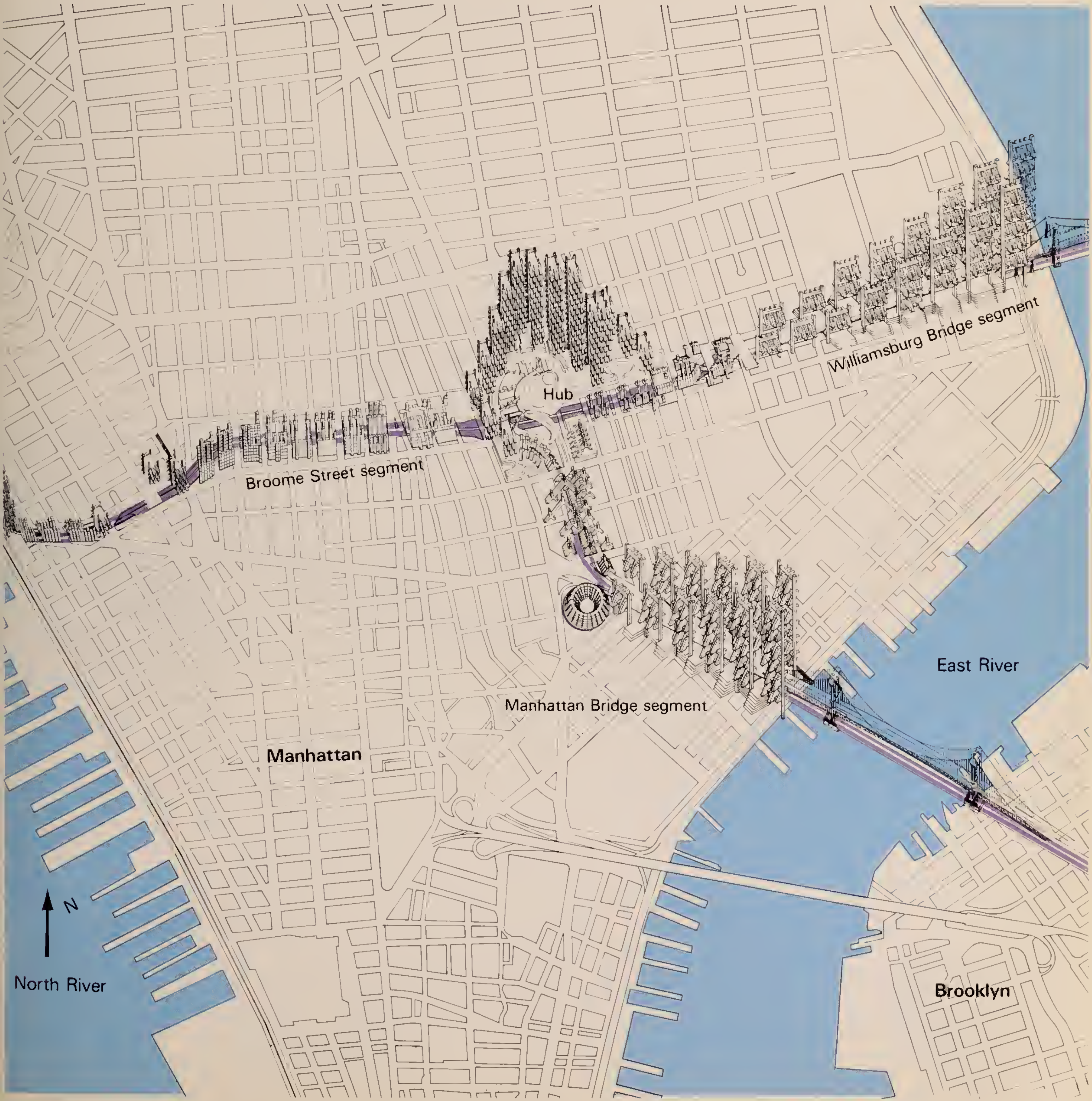
Highway. The highway begins to the west at the entrance to the Holland Tunnel (Figure 3 for all the transit and pedestrian systems). Its eastern edges are, to the north, the landfall of Manhattan at the Williamsburg Bridge and, to the south, the edge of the island at the Manhattan Bridge. The intersection of the three legs of the corridor is developed as a major transportation and transit interchange, the HUB.

Along these routes a newly developed, limited-access expressway connects both bridges to the Holland Tunnel. There are access roads from the expressway to the Manhattan surface streets at the West Side Highway, at the HUB, and near the approaches to the Williamsburg and Manhattan Bridges. The expressway itself courses from well below ground level in some areas to well above ground level in others, depending on the needs of its own routing and the additional land use and design objectives of each segment of the route. Specifically, the expressway descends from the present Williamsburg and Manhattan Bridge ramps to grade east of the HUB. At the HUB, it is below the surface street level. It then runs below grade to the western edge of the route, where ramps to the West Side Highway and other surface streets emerge as the roadway links into the existing Holland Tunnel approaches.

Horizontal and Vertical Transport. Within the highway corridor area there are other horizontal transportation systems. A people mover system links the whole area, as illustrated in detail later, and as seen diagramatically in Figure 3. The system, a large loop, connects many of the buildings, plazes and facilities along the route. It too courses at different levels, ranging from an elevated line near the bridge approaches to an exposed system that arcs around the HUB to a line that runs above the highway but below many of the buildings in the western leg of the corridor. The people mover creates continuity throughout the corridor. It also connects all existing transit systems within the corridor with active pedestrian areas such as building plazas, major elevator banks, parking garages and the HUB.

Pedestrian walkways are also integrated into the linear corridor

4 Study Area: Proposed Development Scheme

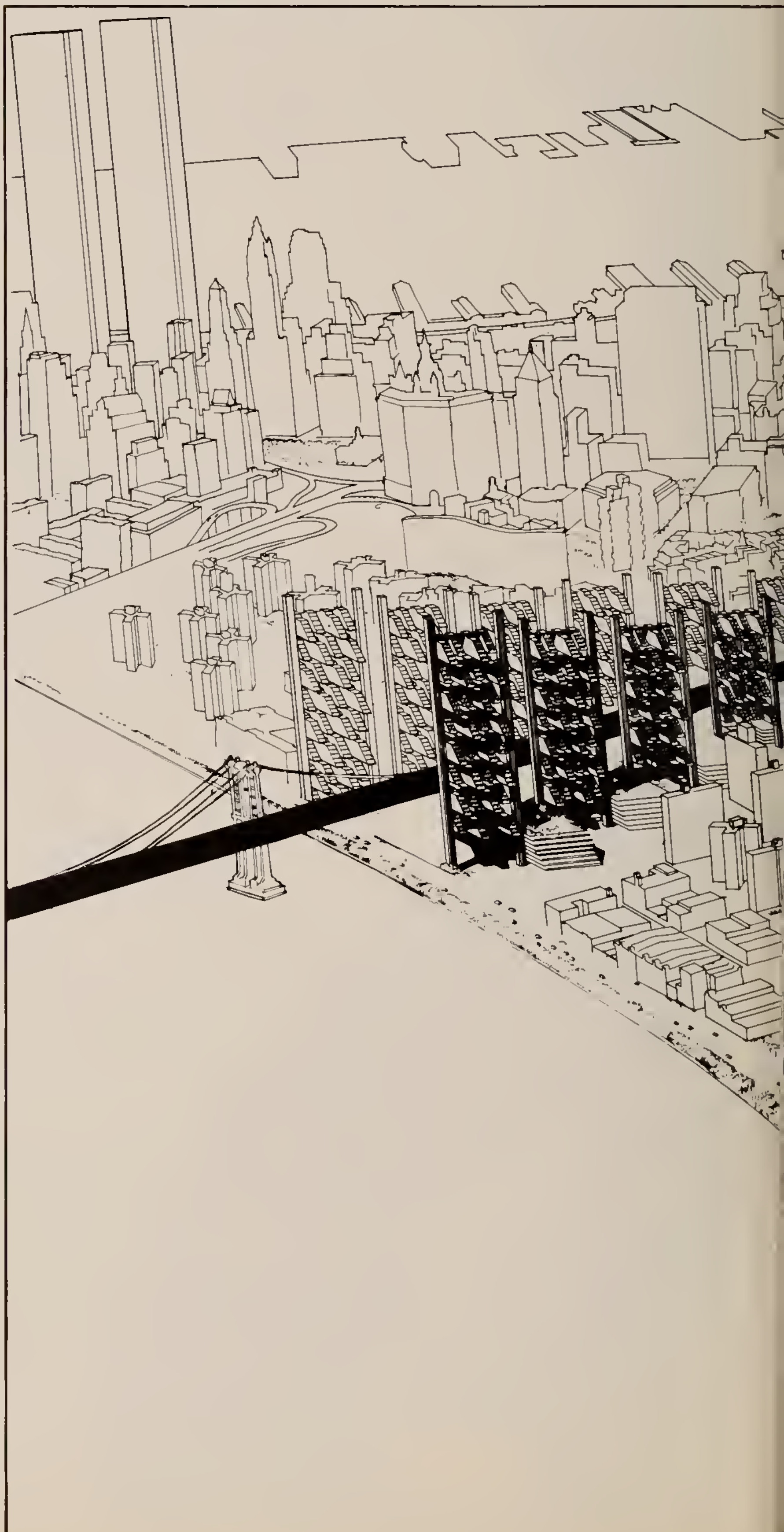


plan. In places, the pedestrian way is elevated on a bridge-deck over the expressway, to create a large plaza. This occurs when tall buildings flank the expressway corridor, as at the bridge approaches (Figure 4). In other segments along the route, particularly when low buildings span the highway, pedestrian ways run along the outer edge of the structures and along a central spine above the highway median strip.

Vertical transport by elevator and escalator provides linkage between various public areas and plazas, to parking, and from building interior to activity levels wherever a multilayered situation is proposed.

The Existing Streets and Transit. No existing transit line is interrupted by the proposed highway. The present subway system remains uninterrupted. Major development nodes, particularly at this HUB, are positioned near or connect directly to the existing subway system.

5 Gateway Buildings Overview

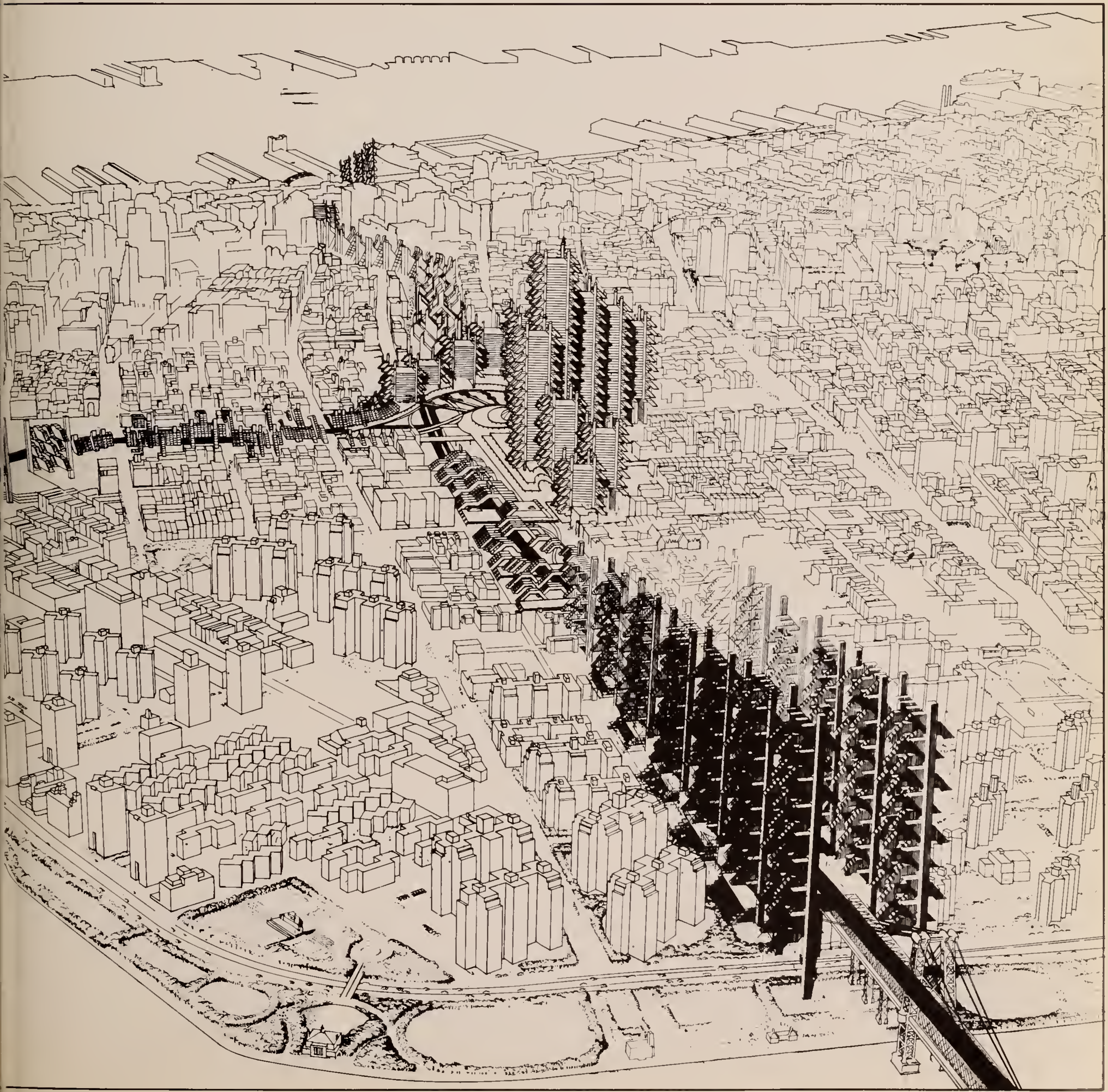


The corridor redevelopment scheme has as one of its underlying objectives observance of the city street system, so surface streets continue wherever possible. The new highway is designed so that it does not become a barrier which divides nearby neighborhoods, or for that matter interrupts the street system network connecting lower Manhattan to the rest of the island. Therefore, the existing north-south streets are interrupted infrequently. This occurs only where absolutely essential: at the HUB and occasionally where the highway crosses the present land grade, such as near the bridge approaches. Rather than using existing east-west streets as the exclusive corridor of the expressway, midblock routes have been selected where warranted. This is done to preserve existing urban activity, neighborhoods, and places of special character and quality.

Air Rights

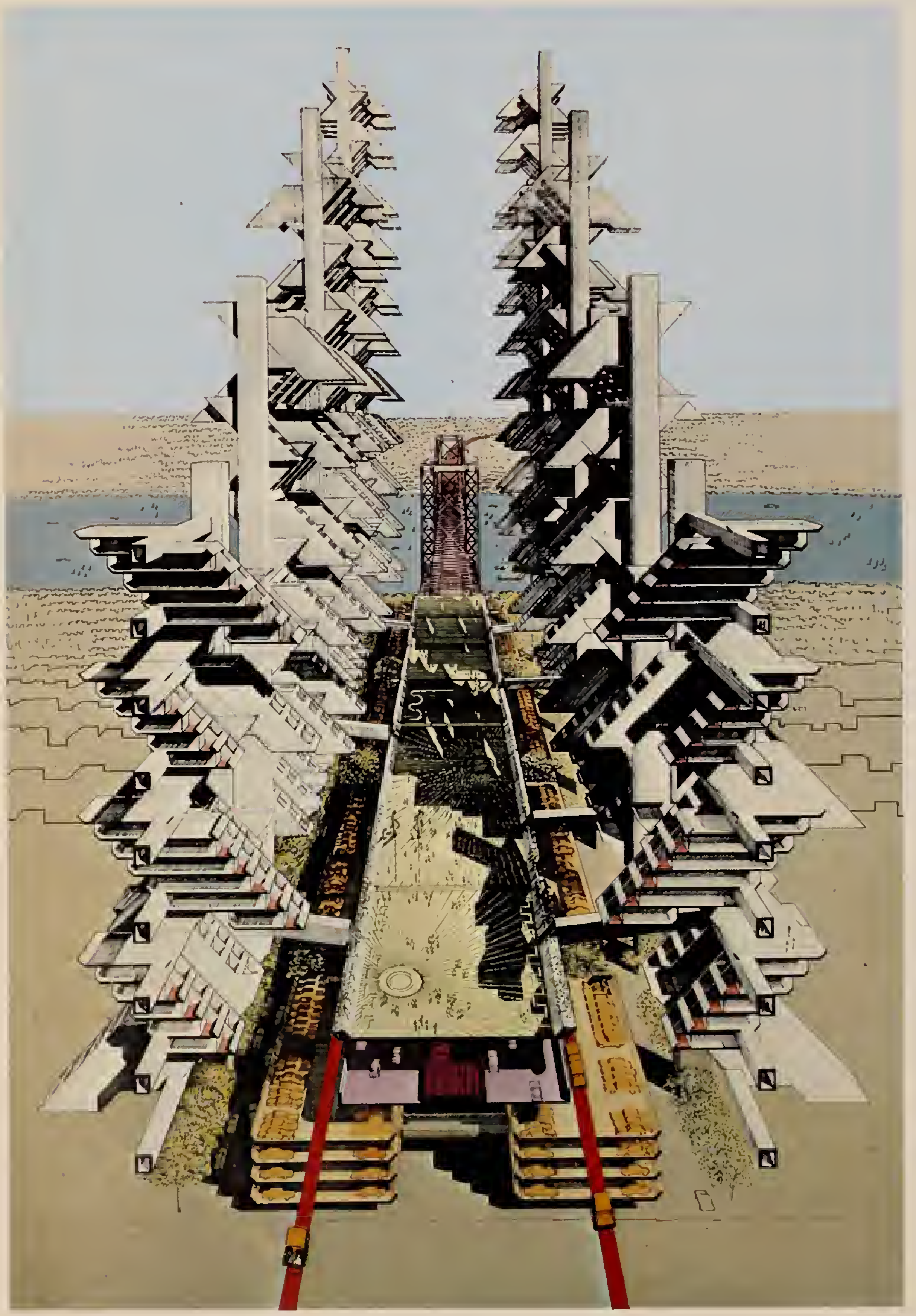
Gateway Buildings (Figures 5, 6). Tall residential buildings of up to 60 stories signal a gateway to the city at both bridges and lower gateway buildings are placed at the Holland Tunnel (Figure 5). This entrance to the city is used to create a special residential building type in conjunction with the expressway as the highway rises to cross the bridges or descends to join the Holland Tunnel.

At the edge of the bridge approach ramps, stepped-back residential modules are massed into a continuous megastructure designed to gain light, views and terrace open spaces for each unit (Figure 6). New decks are built both above and below the existing bridge access ramps, then linked together into an integrated sequence of superimposed decks in air rights. The top deck is a wide pedestrian plaza linked by ramps to the residential buildings on each side. On it is positioned the people mover. At



the end of the elevated bridge approach plazas, suspended some 50 feet in the air, the people mover makes a turnaround loop. Elevators within the flanking housing structures continue down to the surface of the city, connecting apartments, the people mover and the plaza above existing bridge levels to new parking levels and existing sidewalks and grade streets below. Just below the upper pedestrian plaza, the existing bridge approaches and rail tracks continue to function as they do now.

6 Gateway Buildings Perspective Section

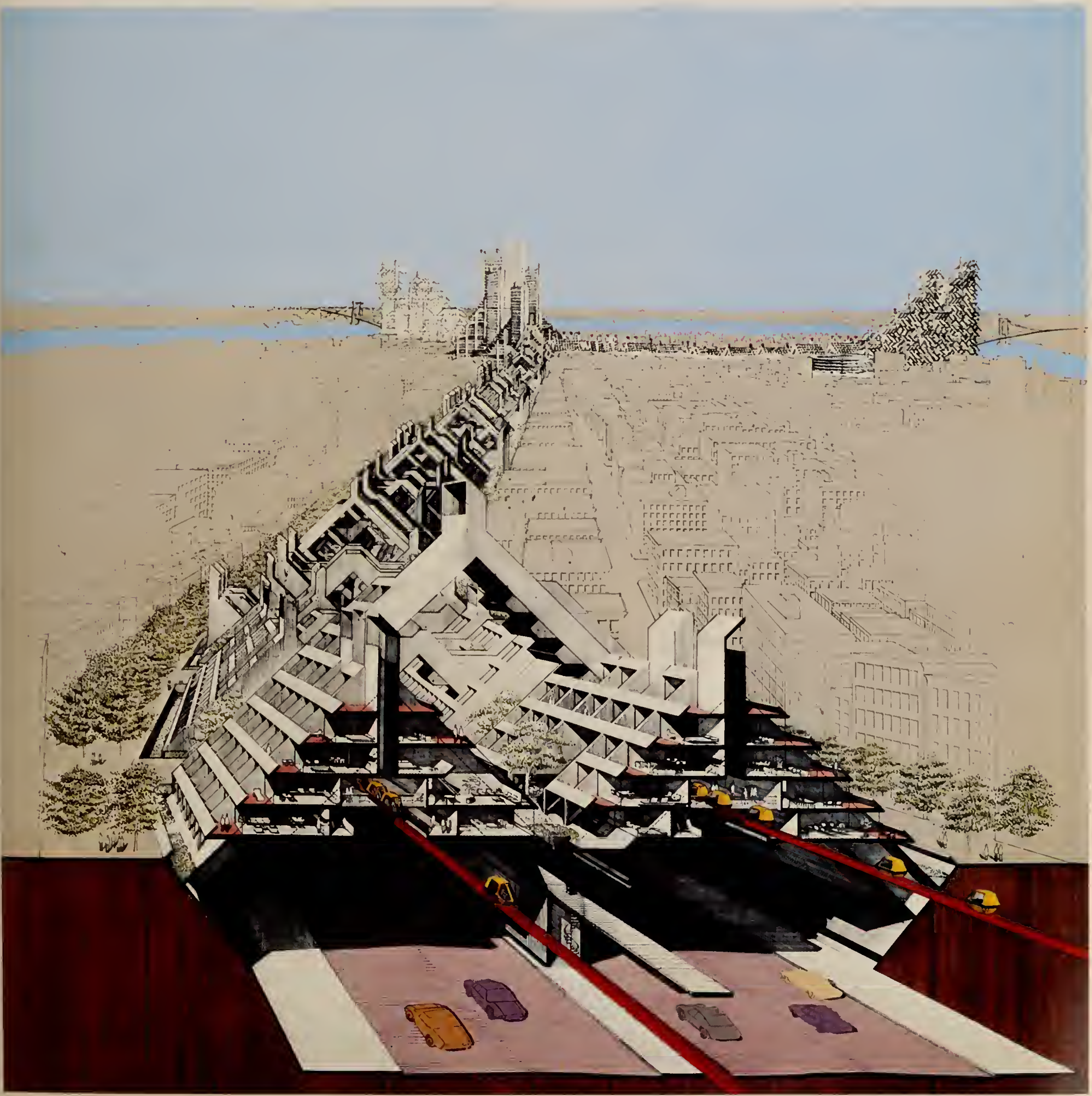


Cross-Corridor Buildings (Figures 7, 8). Cross-corridor buildings are proposed where low structures may appropriately span the expressway itself (Figure 7). An A-frame structural system described later (Figure 11) is used to span the expressway. Tall ducts assist in ventilating the expressway. Modular units, which can accommodate new residential facilities, as well as expanded educational, commercial, social and other related activities within the linear megastructure, are stepped back as in the gateway buildings. The setback provides good light and open terrace spaces. The building foundations are supported in the expressway's median strip and at the outer edge of the expressway.

In the air space above the median strip of the expressway, a pedestrian spine runs between the buildings, linking the buildings within the corridor to one another and providing an upper-level promenade. It is also connected by walkways to the people mover which runs below the buildings and over the expressway.

Key for Figures 6 and 7:
▨ expressway
🟪 subway
🟥 people mover
🟧 parking
⬜ pedestrian level

7 Cross-Corridor Buildings Aerial Perspective



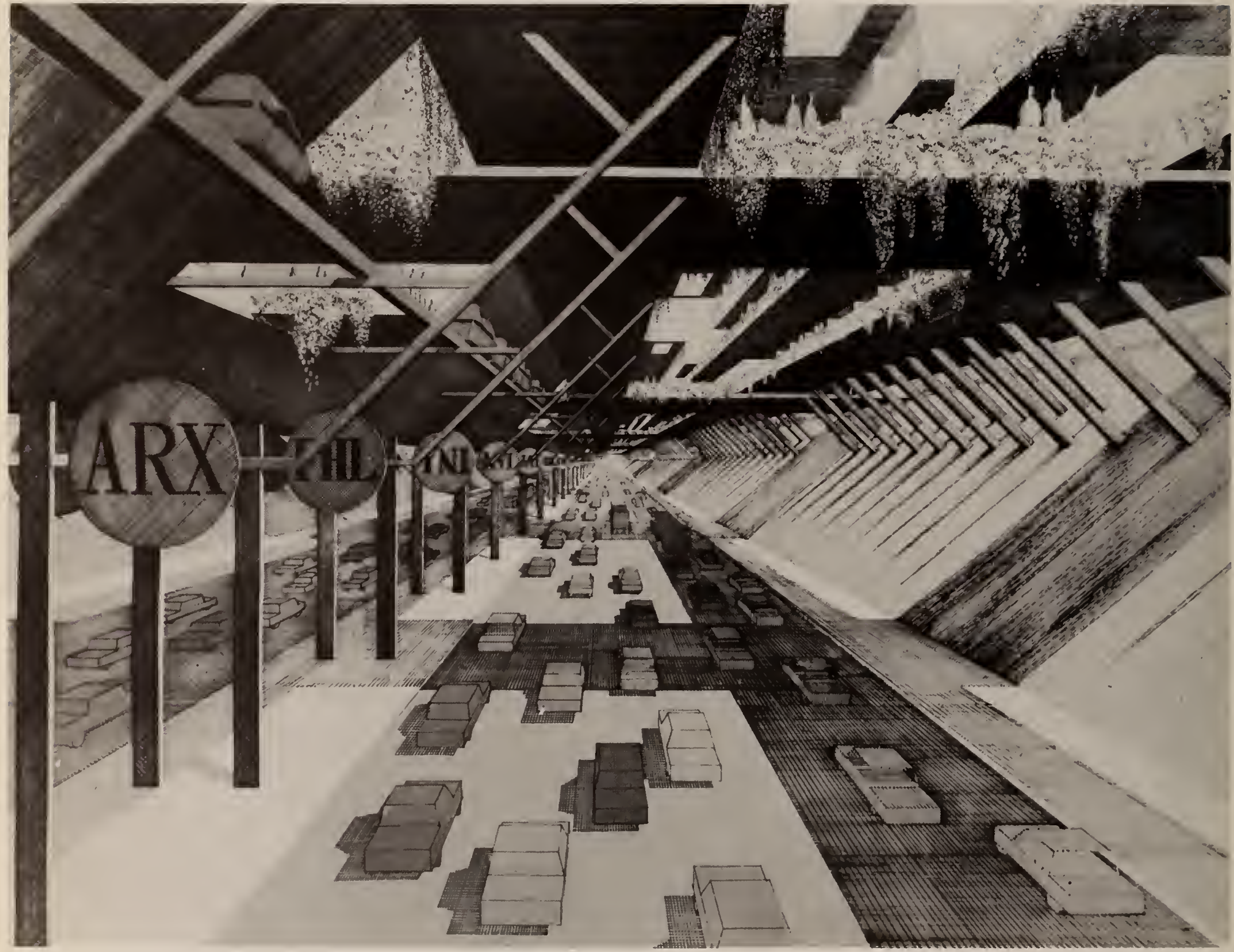
In addition, this pedestrian spine, though somewhat above grade, would generally be linked to the street level by well-positioned walkway ramps at the intersections with on-grade north-south surface streets.

Generally, the linked cross-corridor air rights buildings are interrupted when an on-grade north-south street is encountered. This way, the present street system in the city is not obstructed, while the expressway continues below.

A view from just above the expressway but beneath the new A-frame buildings illustrates other aspects of the cross-corridor building approach (Figure 8). At the lowest level, the expressway functions below grade. Suspended above it, the people mover system is connected to the pedestrian spine by bridge walkways. Links from the pedestrian promenade deck to the buildings and to the on-grade streets complete the network.

This view also illustrates the A-frame structural system and how it is interrupted from place to place to permit an open, dynamic experience by the automobile rider on the expressway.

8 Cross-Corridor Buildings Perspective Section Below the Buildings



Zoning and the Multifunctional Building (Figures 9, 10)

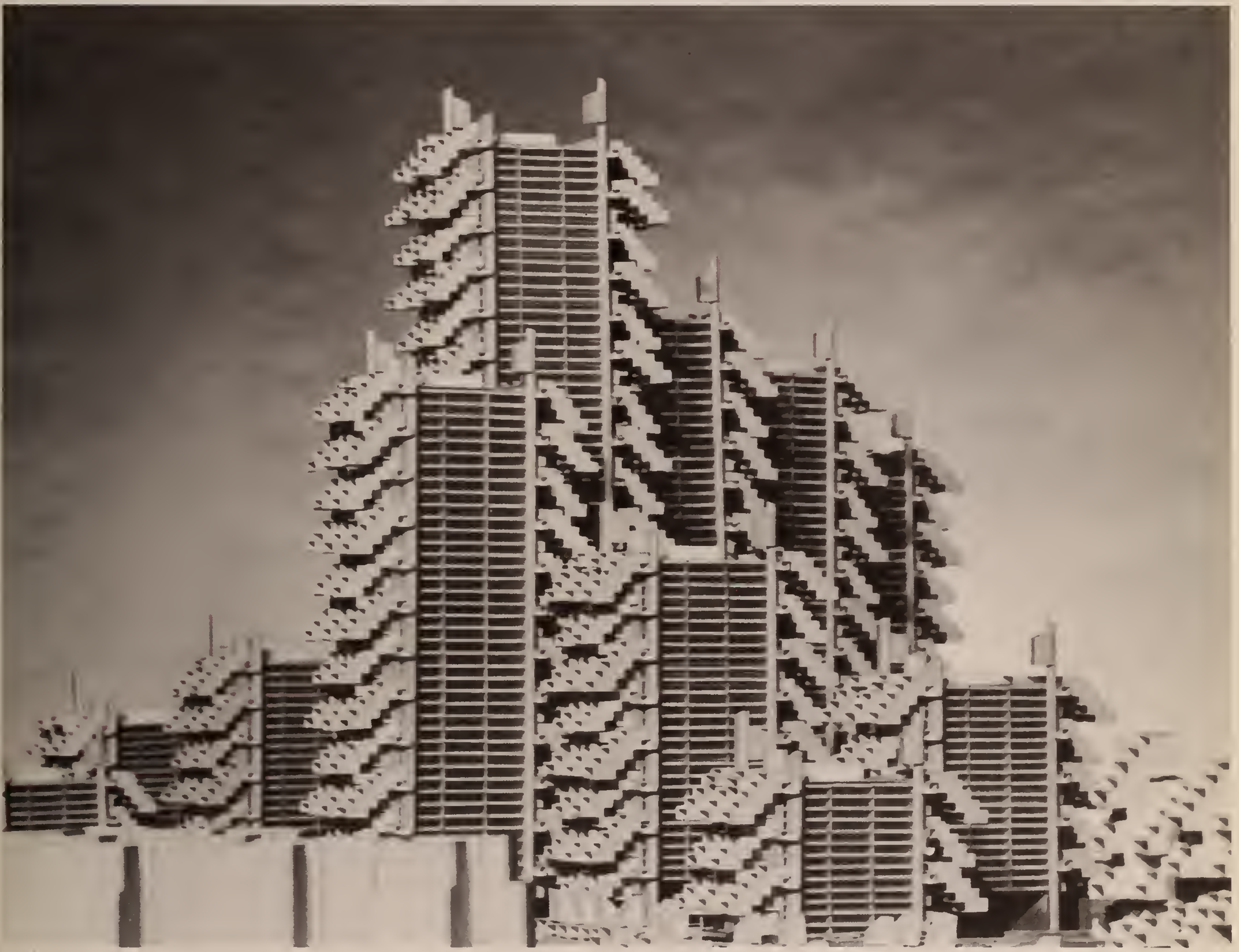
The multifunctional building is basically a combination of two distinctly and visibly different types of internal spaces (Figure 9). One is the large-span, totally interior, flexible, quite undifferentiated office or loft-type space. The other is the cellular, partially outdoors and partially indoors, residential-type unit. In the multifunctional building these are combined to share vertical access, services, utility plant and location in the city.

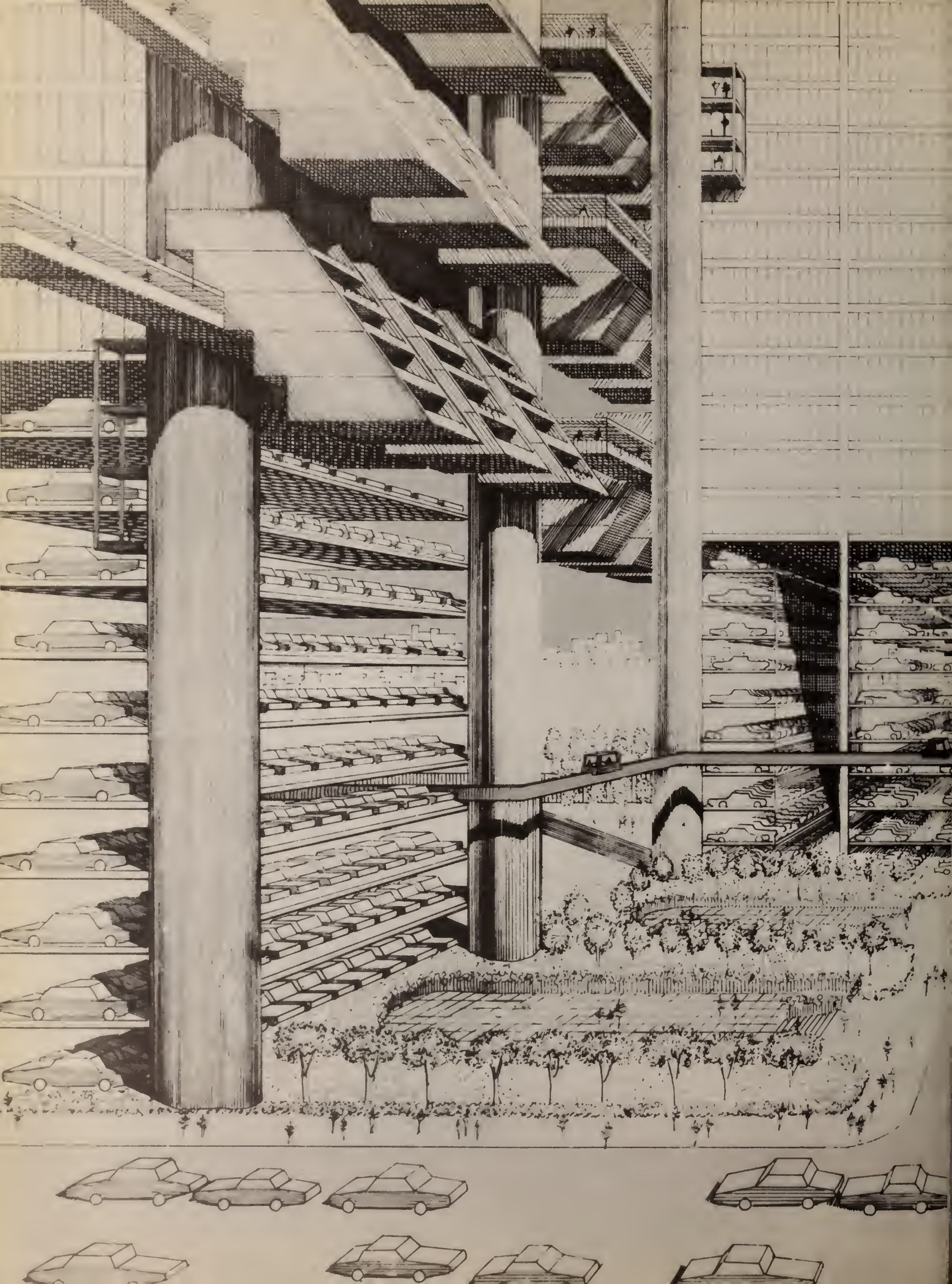
A clustered grouping of multifunctional buildings lends an unusual appearance to the urban landscape. Residential elements are clearly defined, extending as they do from the perimeter of wide-span spaces. The use of interior space in the urban skyscraper is no longer uncertain. A modulation of interrelated building heights creates a purposeful topographic architecture, as discussed in detail later (Figures 20–22). Physically bland, uniform, homogeneous districts mandated by conventional zoning ordinances give way to a cityscape of variety.

The underside of a multifunctional building area illustrates other opportunities for a compact interrelating of space types and uses (Figure 10). Slung below the multifunctional structure are parking decks. The open lattice, wide-span parking garage introduces the third fundamentally different type of space of which the multifunctional building is composed. The parking decks and elevator cores of each building are linked to one another by the people mover. Thus, horizontal and vertical transport systems intersect at convenient points of interchange. At ground level the surface street continues without interruption.

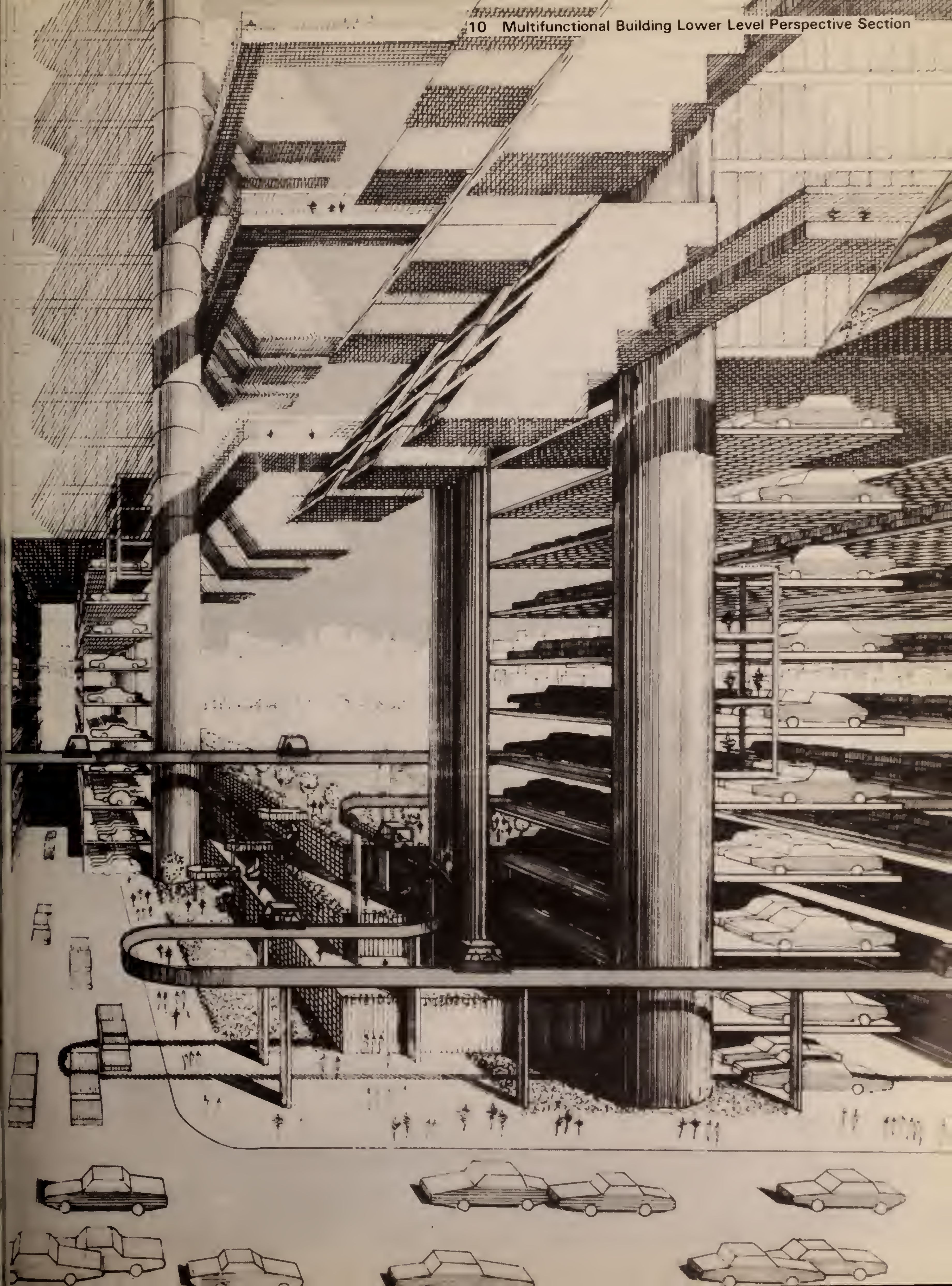
In the multifunctional building which combines and interconnects residential modules, wide-span flexible office spaces and parking decks, economies in mechanical systems, people's own activities and land use are achieved. Furthermore, when transportation, commercial, office and residential activities are well integrated, urban areas become active for longer periods than the normal 8-hour work day.

9 Multifunctional Building Cluster



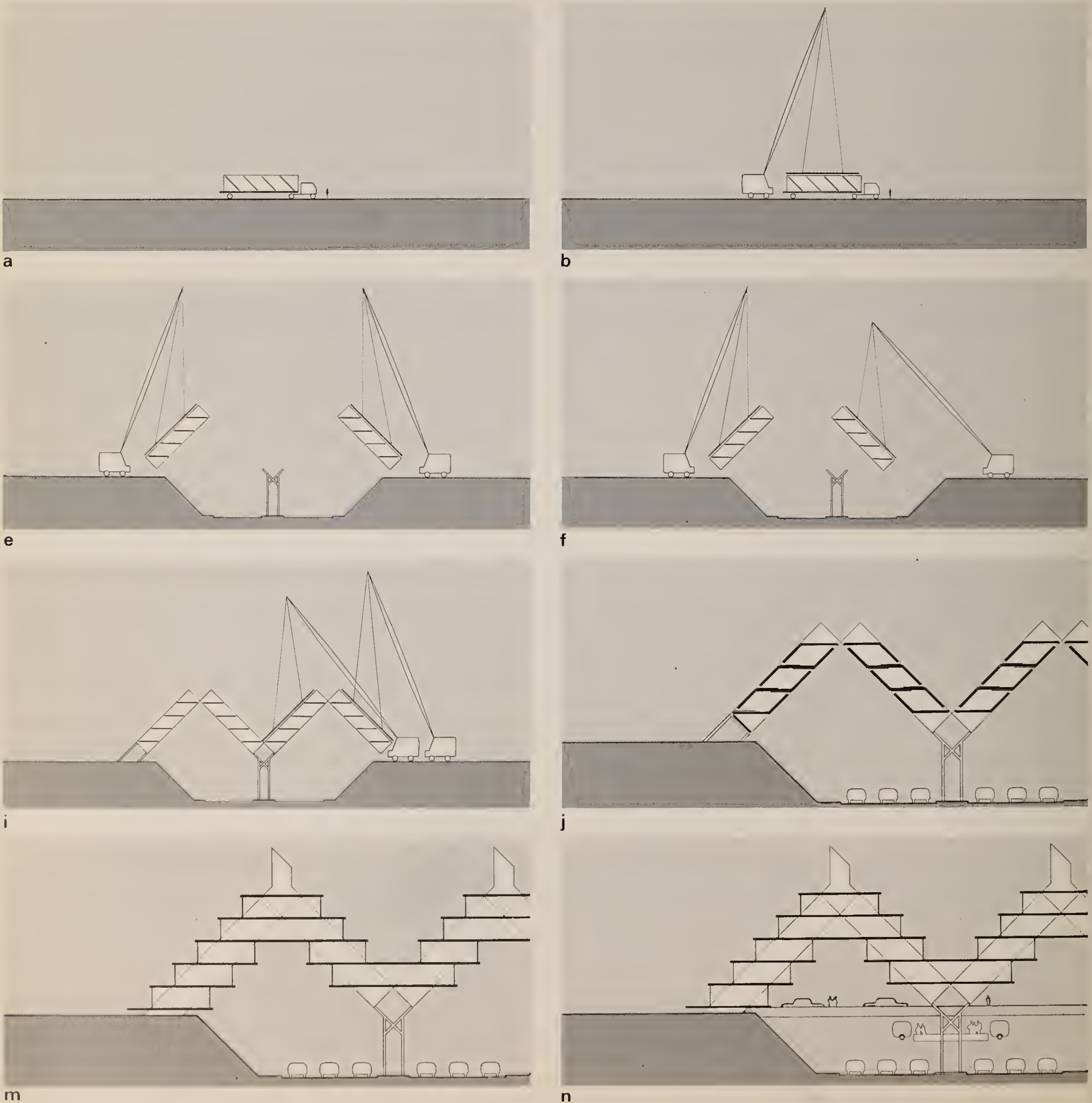


10 Multifunctional Building Lower Level Perspective Section

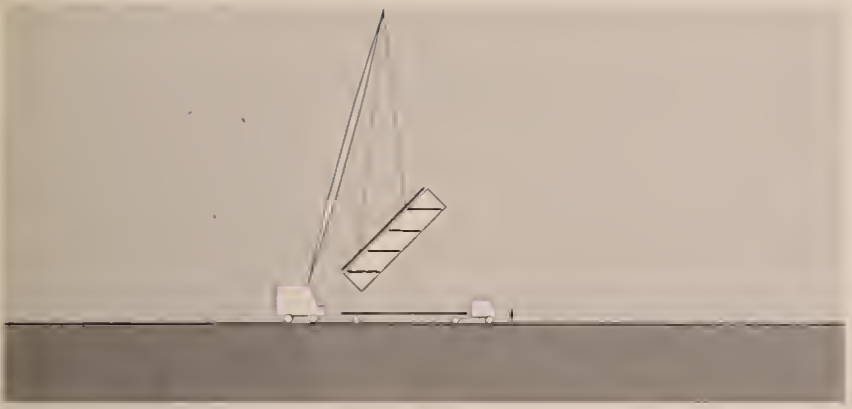


The Building System

Cross-Corridor Buildings (Figure 11). The prefabricated module is brought by truck, preassembled, to the site. It is then lifted by crane and attached to lateral and median strip foundations in the expressway corridor. Units are mounted and fabricated into a cross-corridor megastructure. Advantage is taken of the units' ability to fold out, open up and stack in stepped sequence to create terraces and larger interior spaces. The megastructure is organized to leave a pedestrian deck at the central spine over the expressway median. During construction the people mover, linkage to the surface streets, ventilation ducts and highway detailing are all completed.



11 The Building System: Cross-Corridor Building



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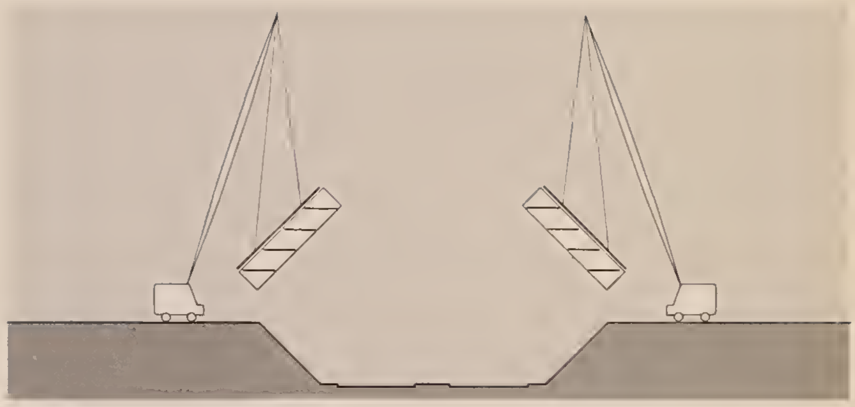

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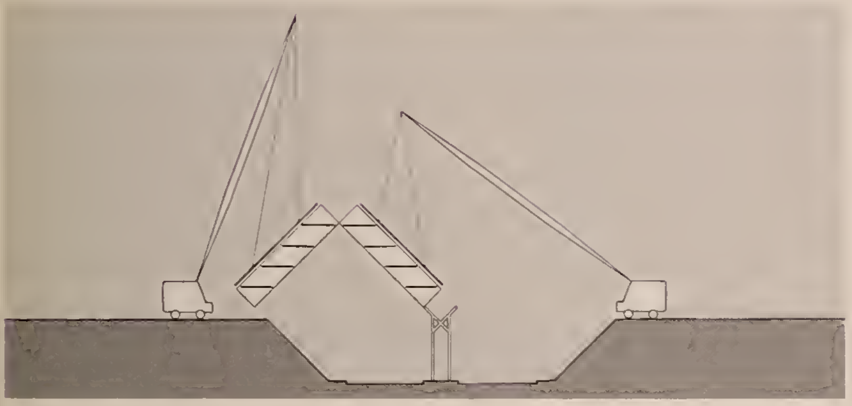

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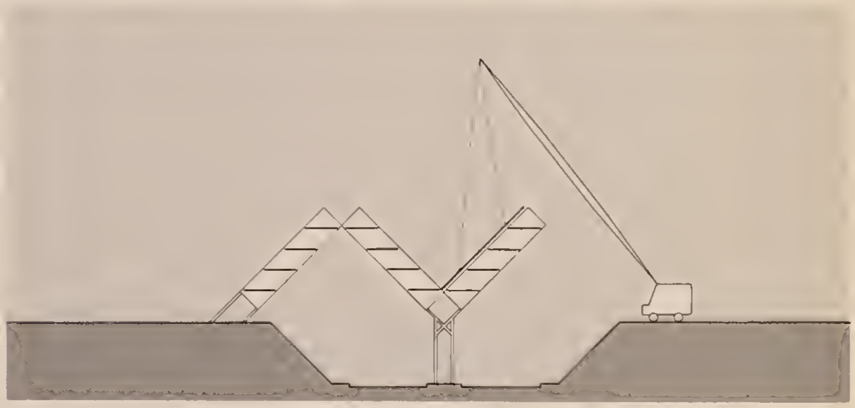

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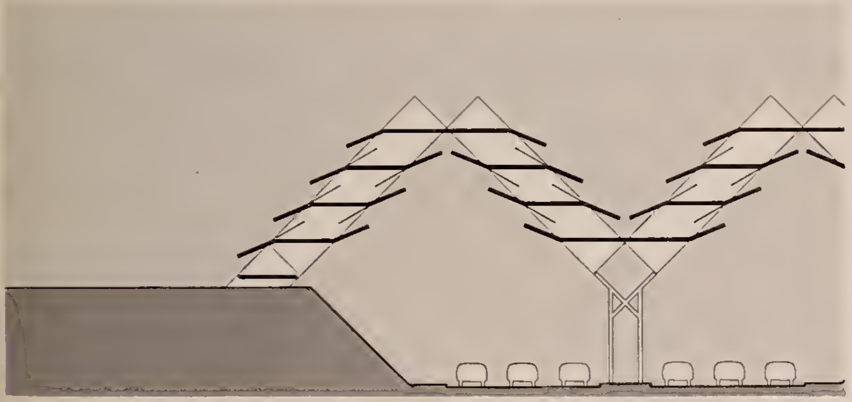

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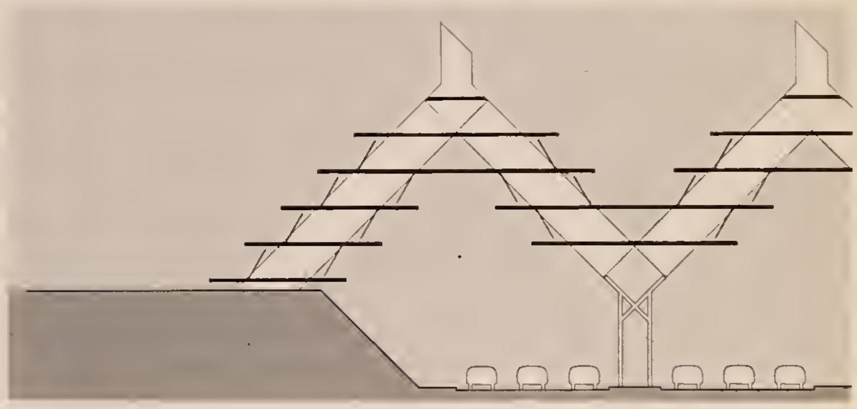

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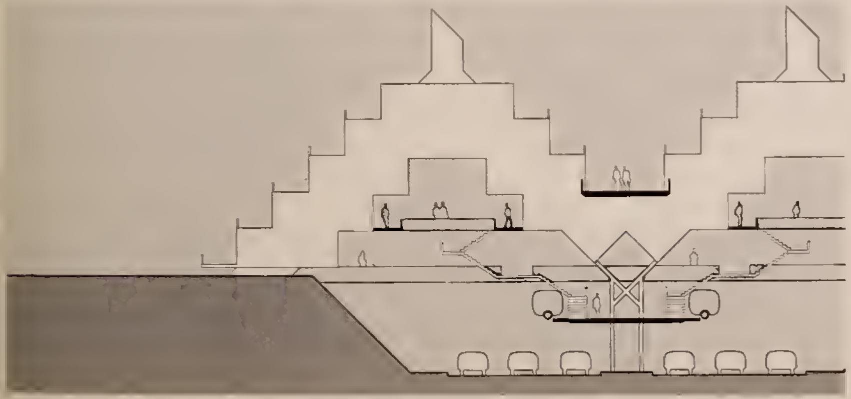

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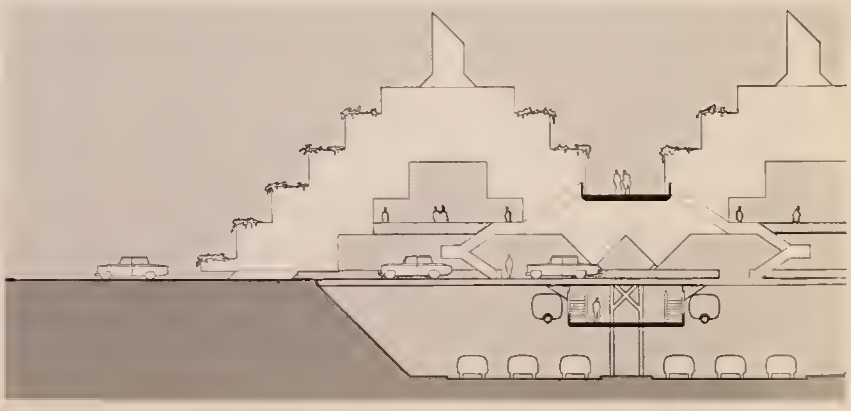

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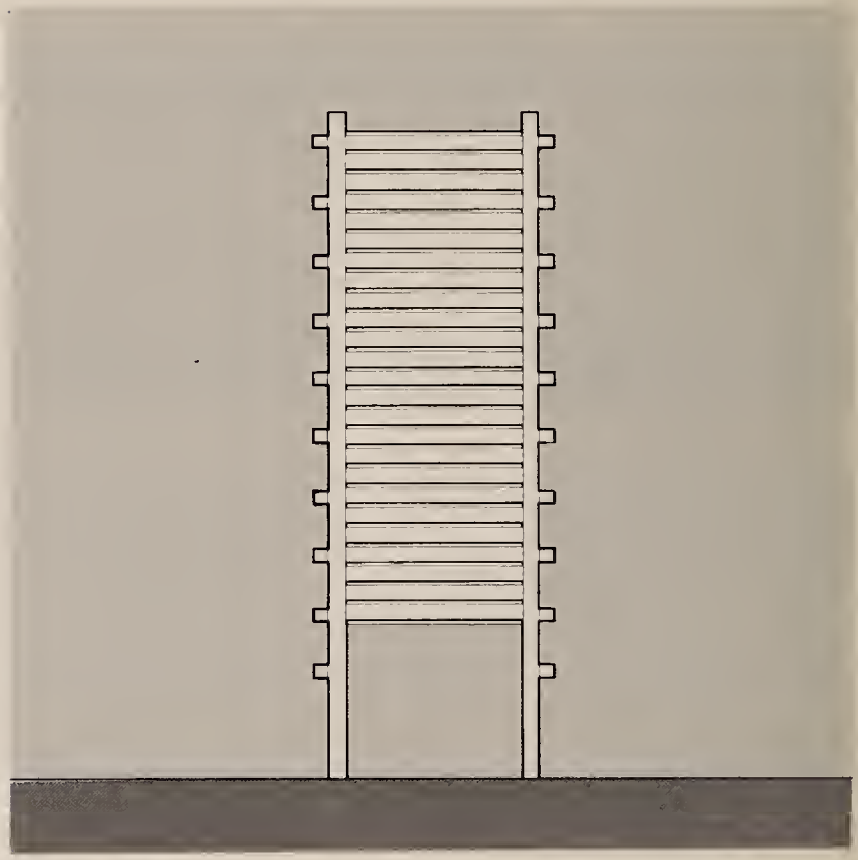
Multifunctional Buildings (Figure 12). Construction of the multifunctional building also takes advantage of methods and technology already available and used in the construction industry. As a first step, a conventional wide-span office-type structure is built with vertical elevator shafts, utility lines and stairs at the corners of the building. Cranes, commonly used in such construction, are then moved to the outer edge of the roof of the building for the next stage of the work. These cranes then raise prefabricated residential units (similar to those used in the A-frame cross-corridor buildings) delivered by truck to the levels which are to contain residential units. They are attached to the office building core, which contains all vertical systems and services. This process is continued until all of the residential units have been positioned and attached.

As evident in a detailed cross-section, a three-cab elevator is used to permit access from the same vertical circulation system to either office or residential floors (Figure 13). This multilevel cab is used because of height differentials between the typical office and residential floors. In addition, it provides a measure of privacy and

12 The Building System: Multifunctional Buildings



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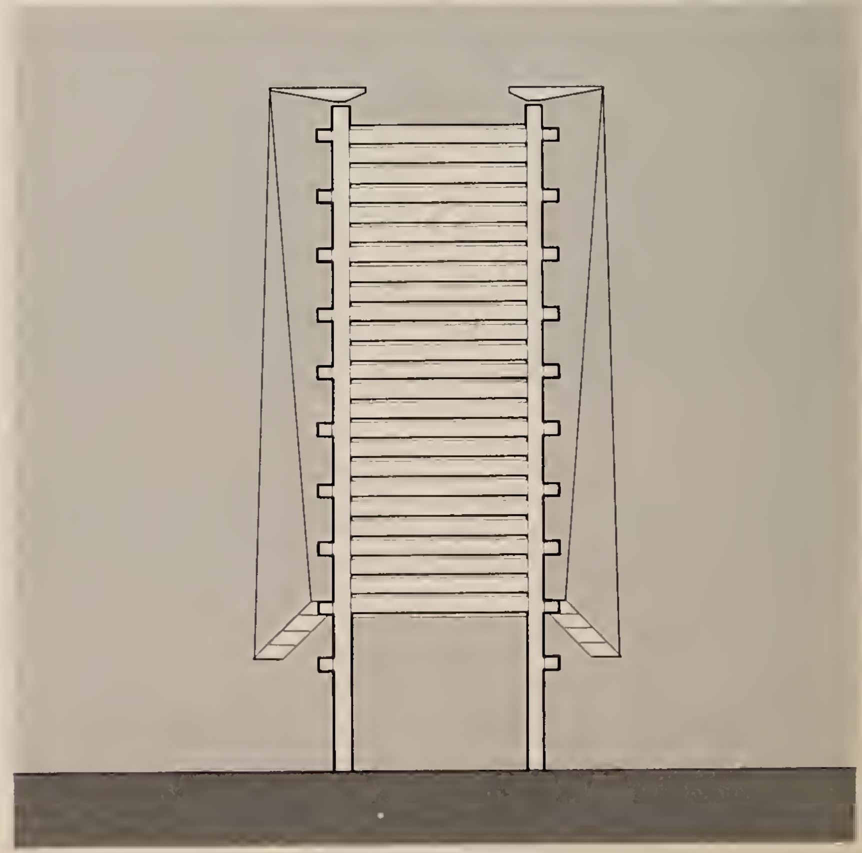

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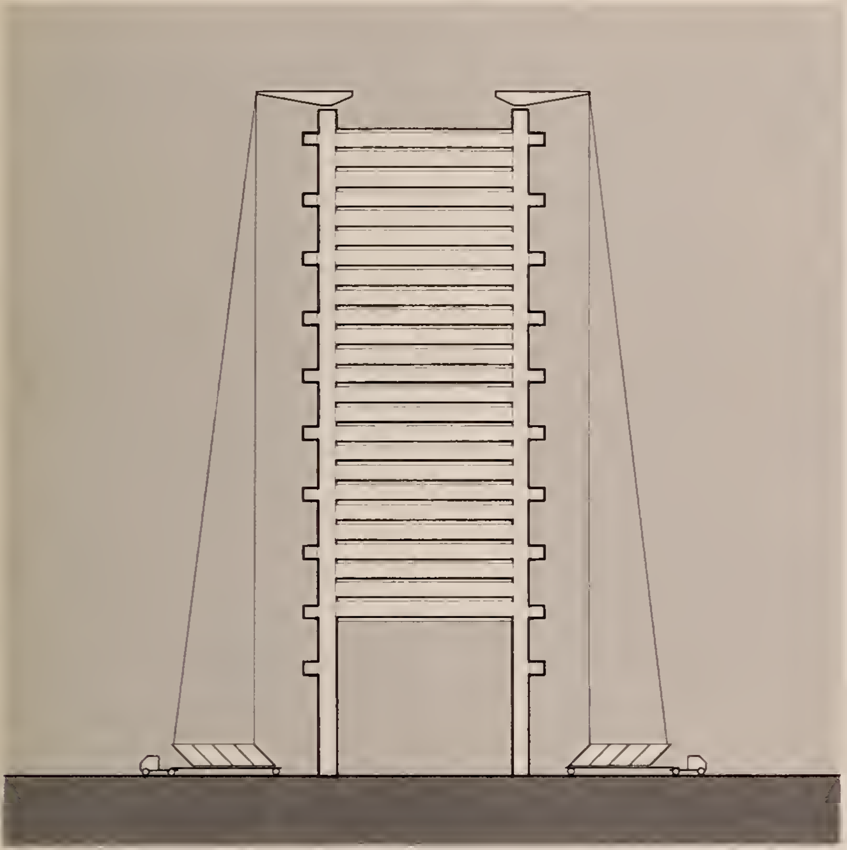
security of considerable importance, especially to the residential units. Thus, if one intends to go to a residential floor, one enters a different cab in the three-tier elevator lobby than if an office floor is the intended destination. The vertical circulation system also connects directly to the parking decks, plaza levels, open park space and grade streets below the office towers as well as to the subway concourse at the lowest level.

The parking area is always entered from grade or plaza level. Vehicles are stored by a mechanical conveyor system already in general use. This system works much like a ferris wheel: the car enters at ground level, is rotated upwards into its slot, and is retrieved when needed. These parking loops are arranged in banks beneath the multi-use building.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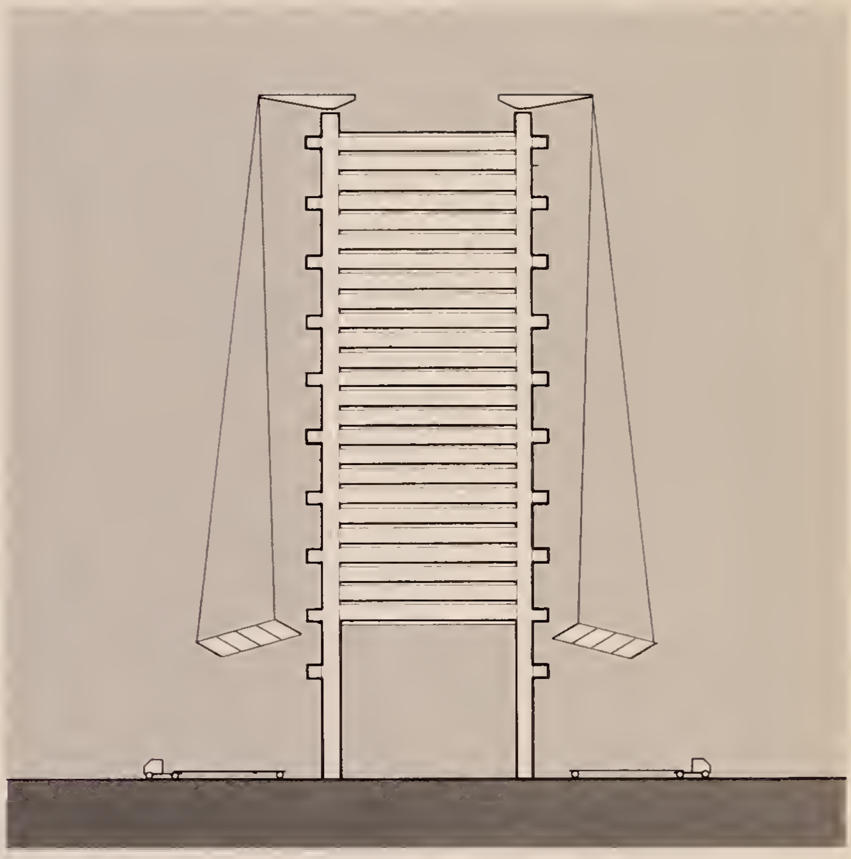
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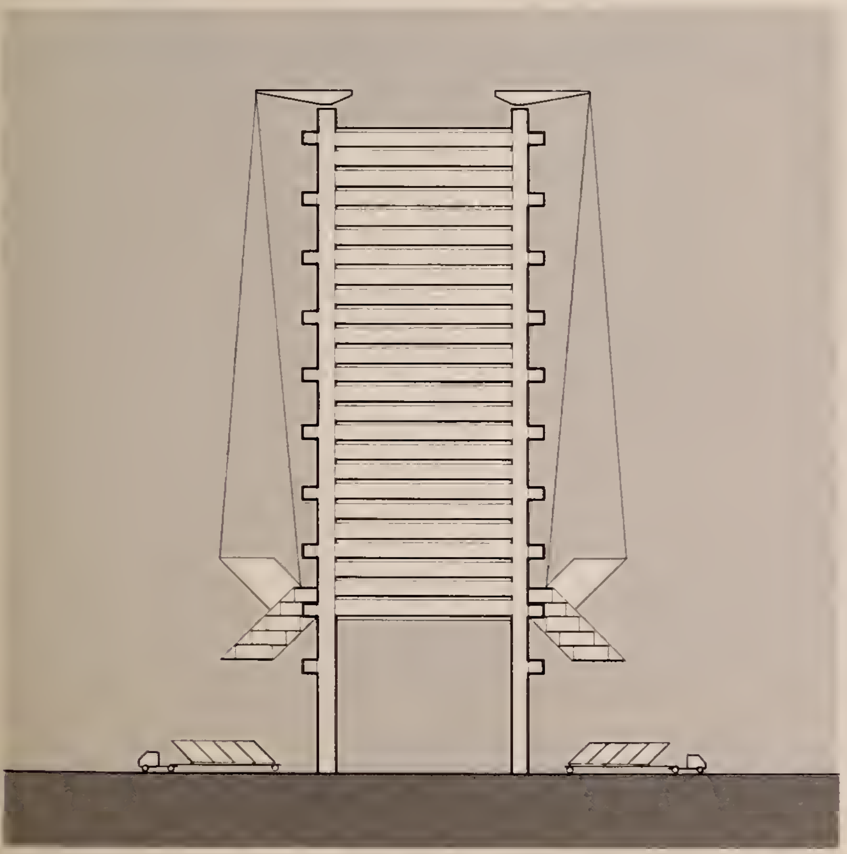
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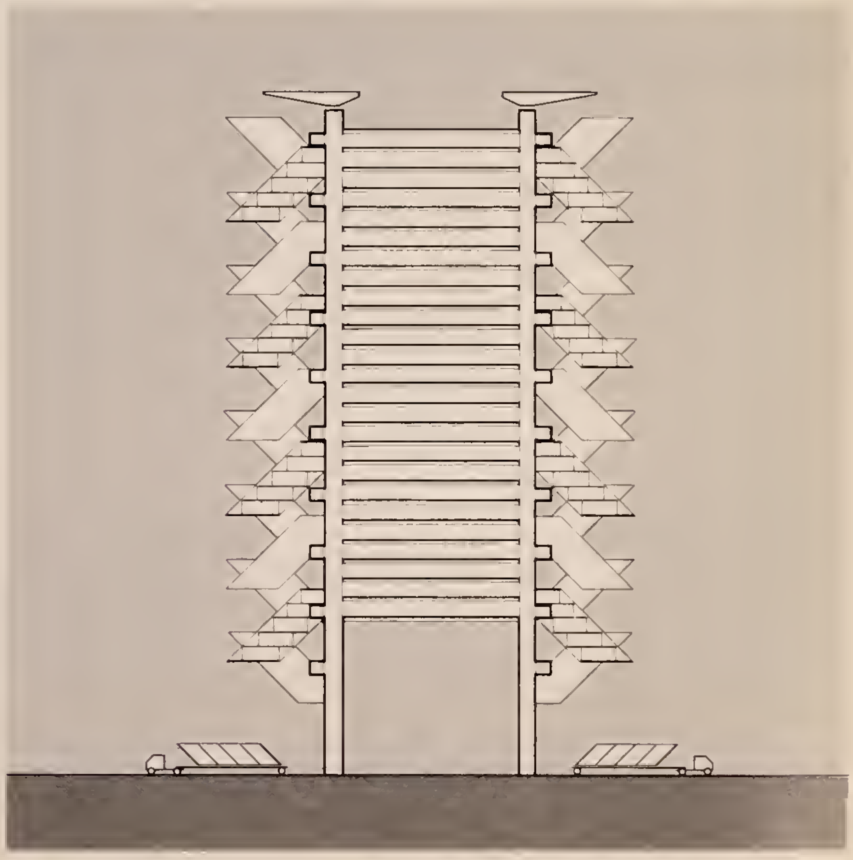
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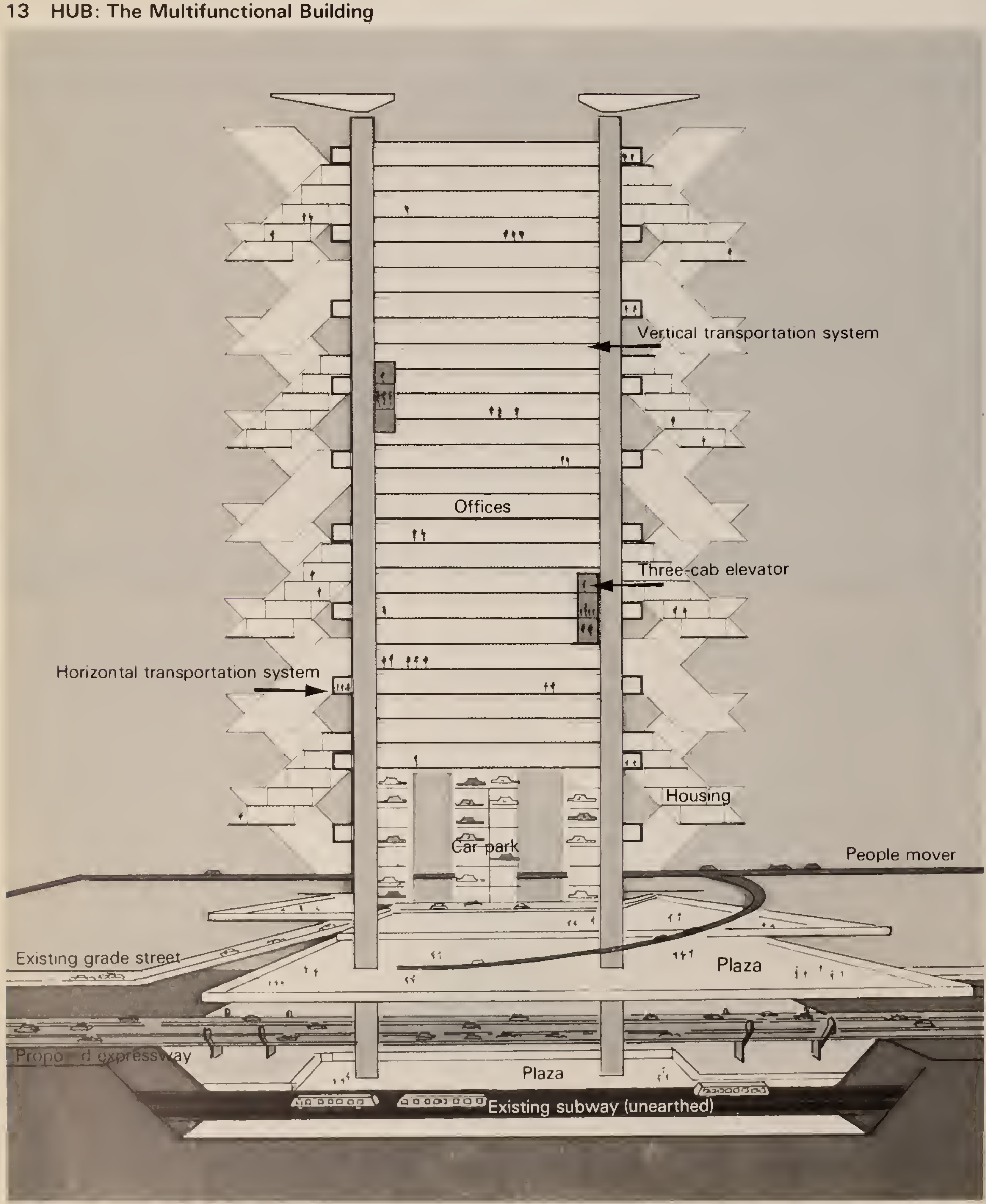
Transportation Interchange: **HUB (Figures 13–17)**

A section through the HUB shows the interconnection between the levels and the layering of the multipurpose center in the vicinity of a multifunctional building at the center (Figure 13). In this diagram, the subway is seen at the lowest level; above it is the highway with ramps leading off into the street network and into parking garages. The surface streets are also seen. Above them, the people mover arcs upward toward the transportation interchange building. A pedestrian plaza links the multifunctional building to the plaza levels and to the transportation building.

An aerial-view sketch of the HUB (Figure 14), and photographs of the model of the HUB (Figures 15, 16) illustrate the relationships around this complex intersection. Tall, multifunctional buildings descend in scale from the center to form a semicircular ring around the northern perimeter of the HUB. In them, residential,

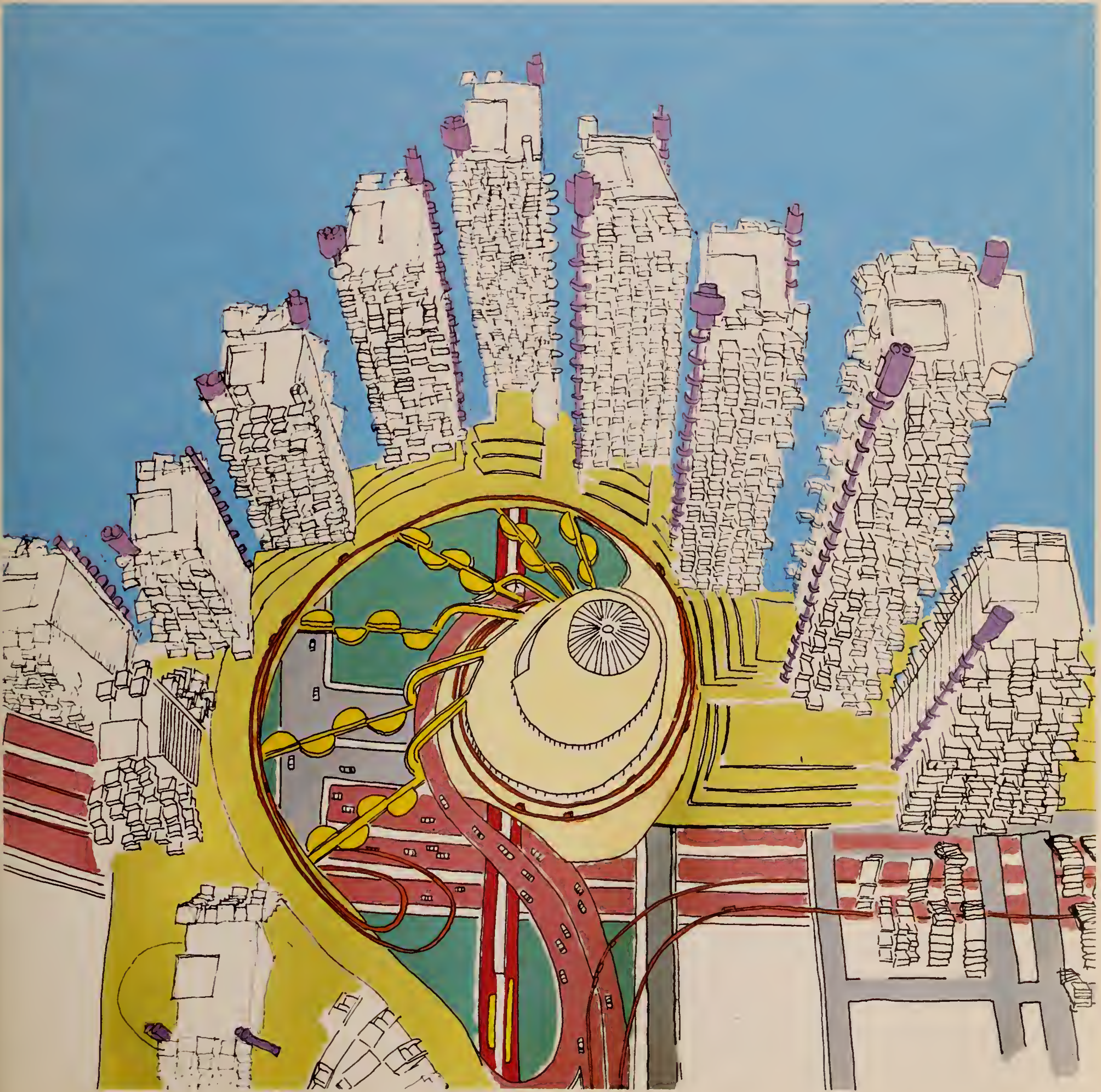
13 HUB: The Multifunctional Building



Key for Figure 14:

- 🟥 expressway
- ⬜ grade street
- 🟥 subway
- 🟧 people mover
- 🟪 elevator
- 🟨 pedestrian level
- 🟨 shopping bridge
- ⬜ transportation center
- 🟩 parks

14 HUB: Bird's Eye View Looking North

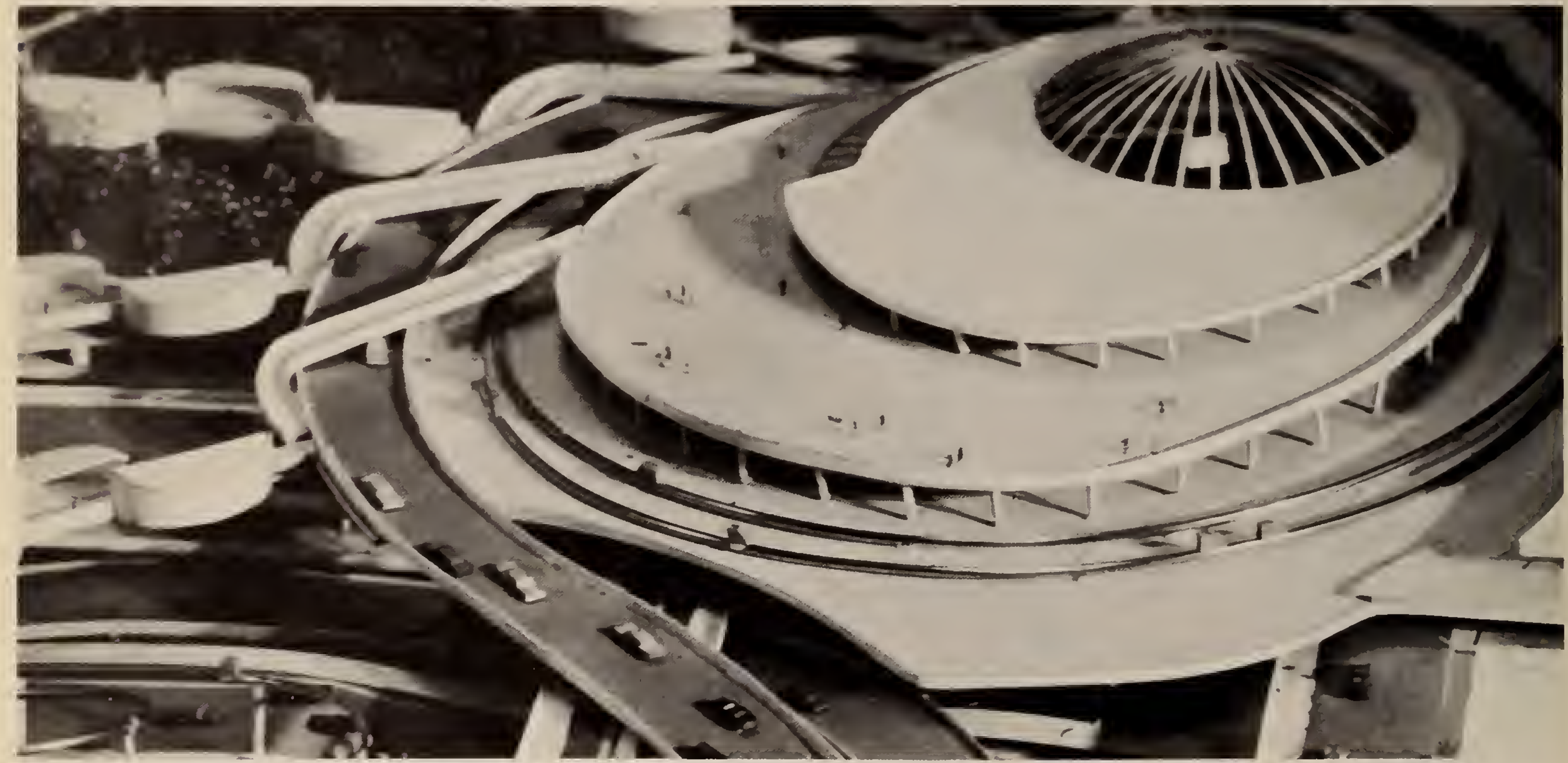


commercial, office and parking spaces are distributed as needed. Bridge-like pedestrian ways lined by semicircular shops connect the HUB outdoor concourse level to the perimeter buildings. Below these pedestrian bridges, landscaped park spaces are provided.

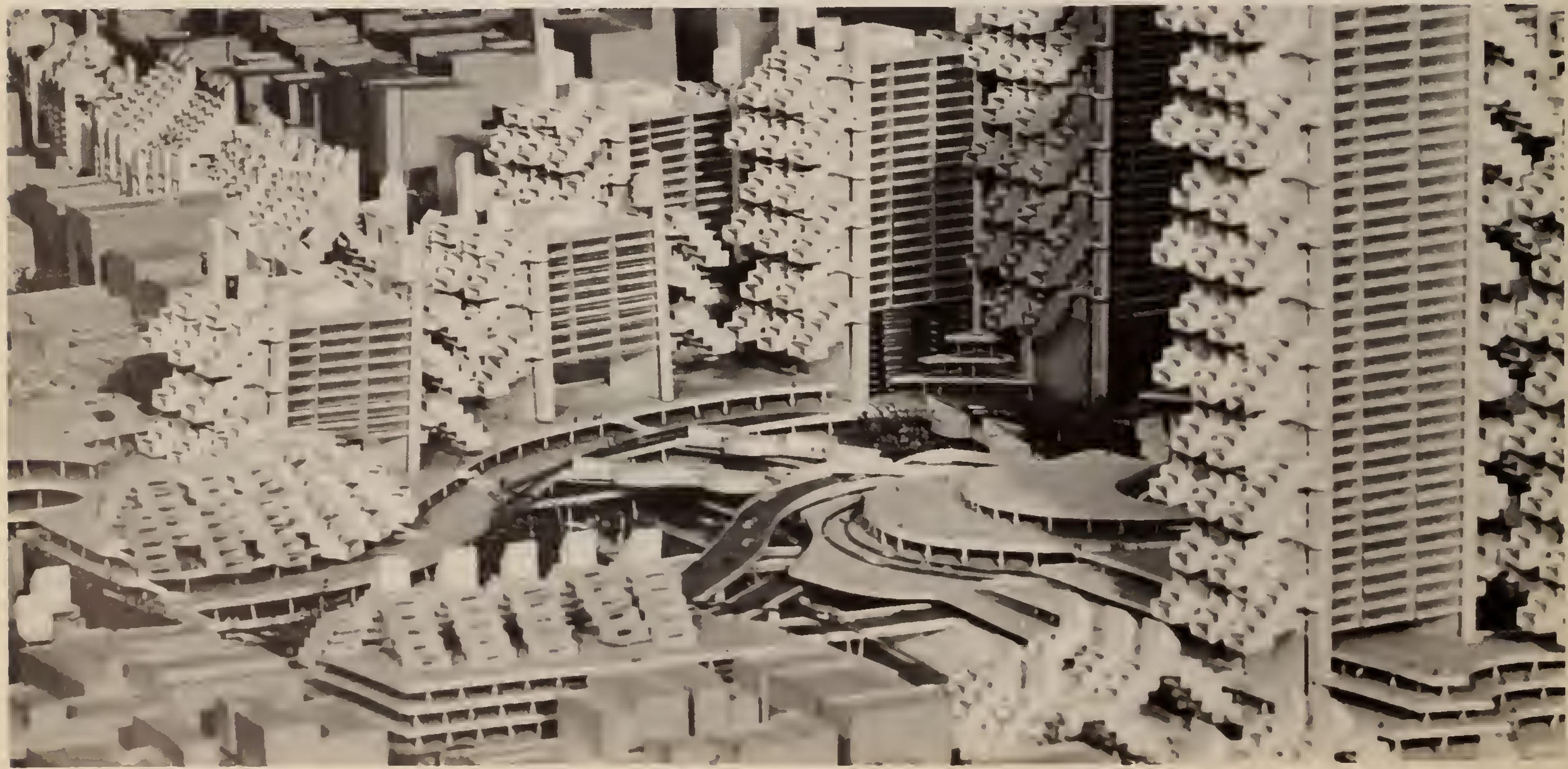
The perimeter buildings are linked to one another and to the HUB transportation interchange building by a multilevel circular pedestrian plaza whose levels are connected by a wide ramp. A network of these pedestrian ramps at the HUB connects all levels and buildings. Here at the center the conventional two-dimensional urban plaza is replaced by a multilevel layering of public open space with overviews of all transit systems and each level of the HUB. A dynamic, volumetric matrix of spaces, systems and landscaped elements is created.

The principal pedestrian concourse is tangent to the transportation center building. It is also connected, as mentioned above, to the perimeter building plazas by pedestrian bridges that span open

15 HUB: Transportation Center Building



16 HUB: Vicinity of Transportation Center Building

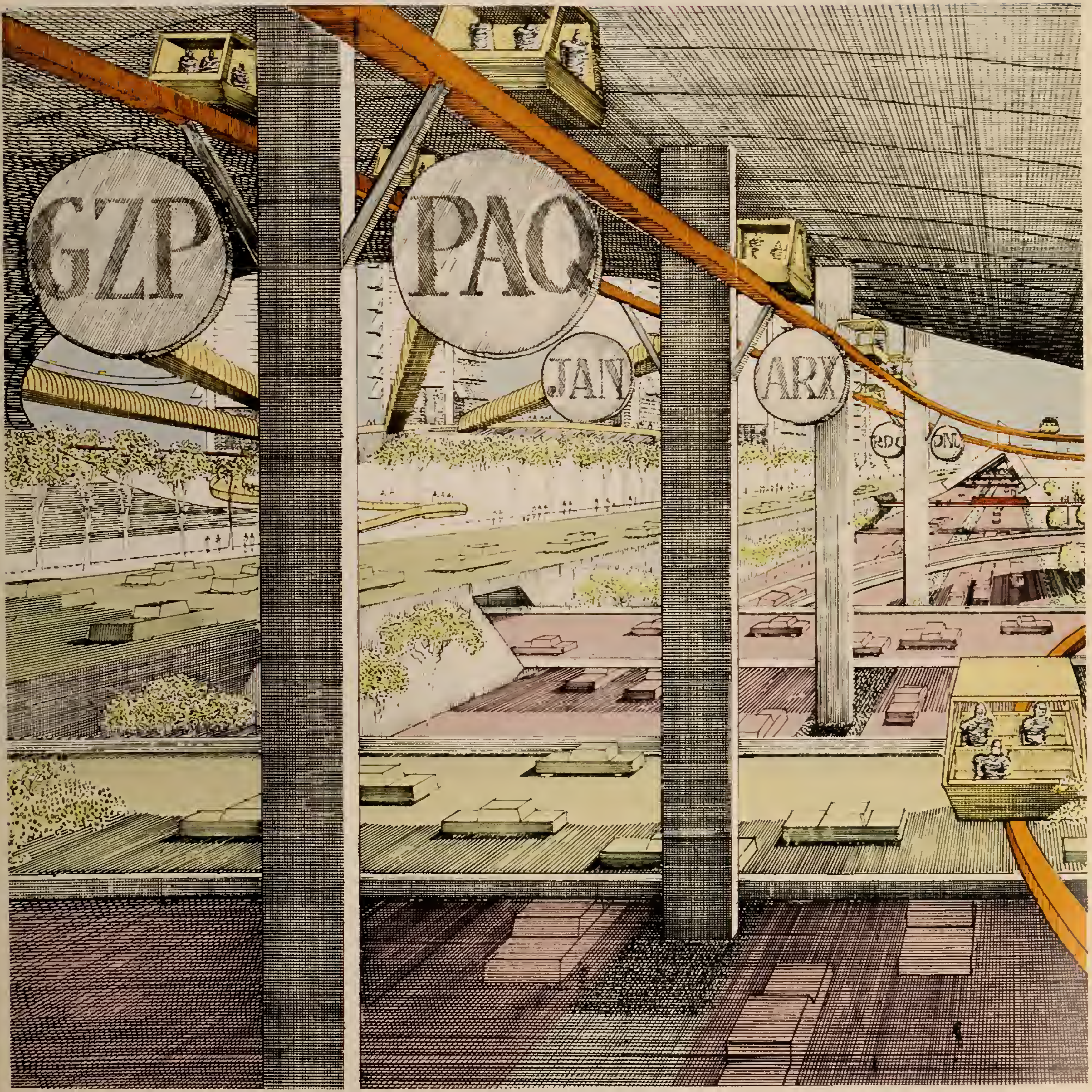


spaces between the multifunctional buildings and the HUB building. A view from below the upper plaza level reveals the volumetric, suspended quality of the various levels of the HUB (Figure 17). In these spaces are revealed the subway, highway, surface-street and people-mover networks. Pedestrian bridges cross the open, multilevel spaces to the transportation building plaza. The subway emerges from its subterranean tunnel and is exposed at grade where its present station platform is located. Each is visible to travelers and pedestrians who are themselves suspended at different use and activity levels in the HUB. Thus, a deep, multimodal sinew of transportation ways and systems is revealed to the spectator, to the person in the city. In addition, these spaces contain landscaped park areas, which function as huge urban planter boxes. Trees and landscaping are thus visible from all pedestrian and transportation levels.

Key for Figure 17:

🟨 grade street
🟥 expressway
🟧 people mover

17 HUB: View Below Perimeter Building Plaza

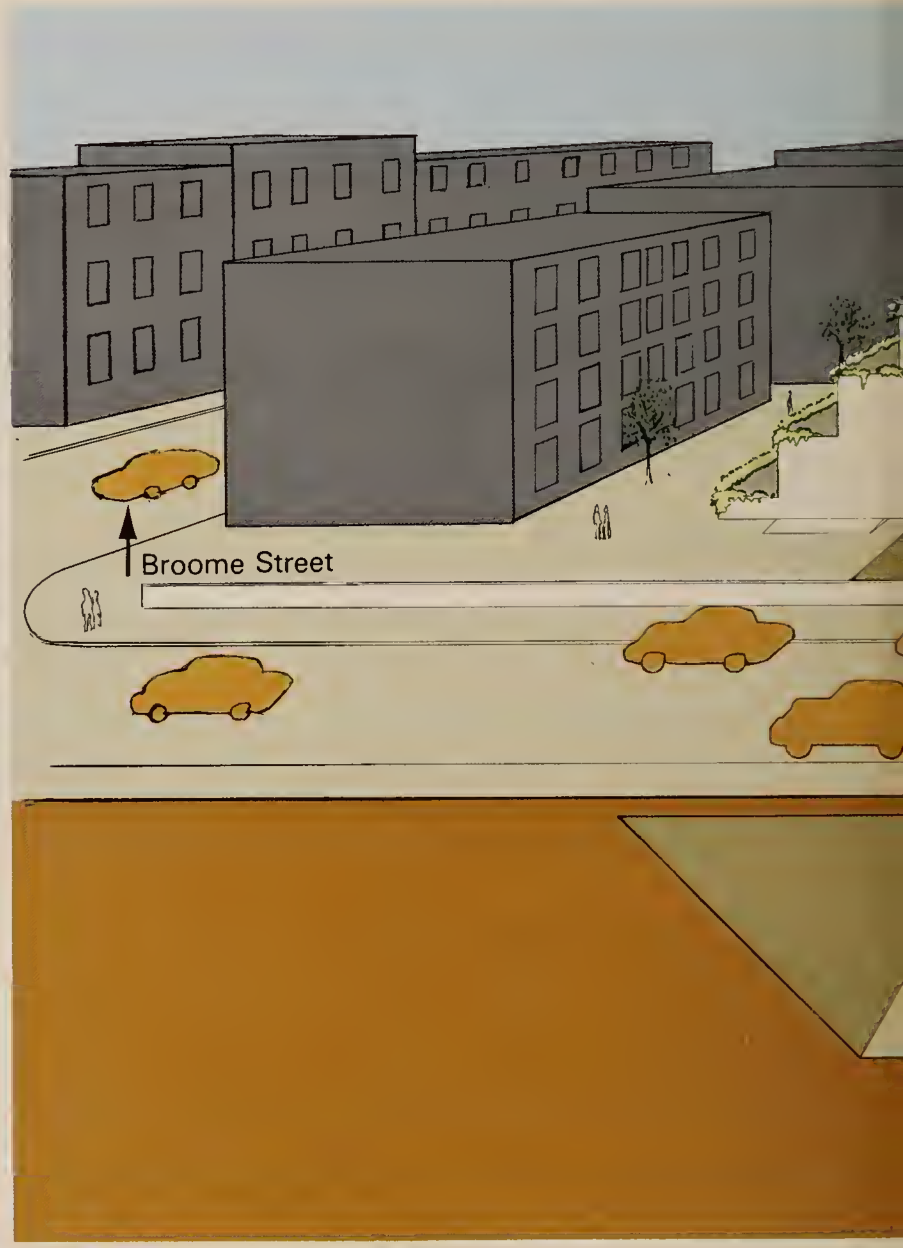


Preservation and the Environment (Figures 18, 19)

In the vicinity of Broome Street there exists an unusual district of representative 19th-century industrial brick buildings with attached cast-iron façades (Figure 18). This building genre once composed many commercial and industrial city centers.
Today, though individual structures of this type remain scattered throughout many cities, including New York, no district of comparable size, quality and authenticity remains.
The new expressway is snaked through the Broome Street area at midblock to preserve both sides of this impressive cityscape, as illustrated on a cutaway section (Figure 19). The expressway is submerged below street level. Its path courses at midblock between Broome and Spring Streets, rather than beneath the existing bed of Broome Street (see Figure 3). This way, insertion of the expressway can be accomplished without the destruction of any of the building frontage along either Broome Street or

18 Existing Broome Street District

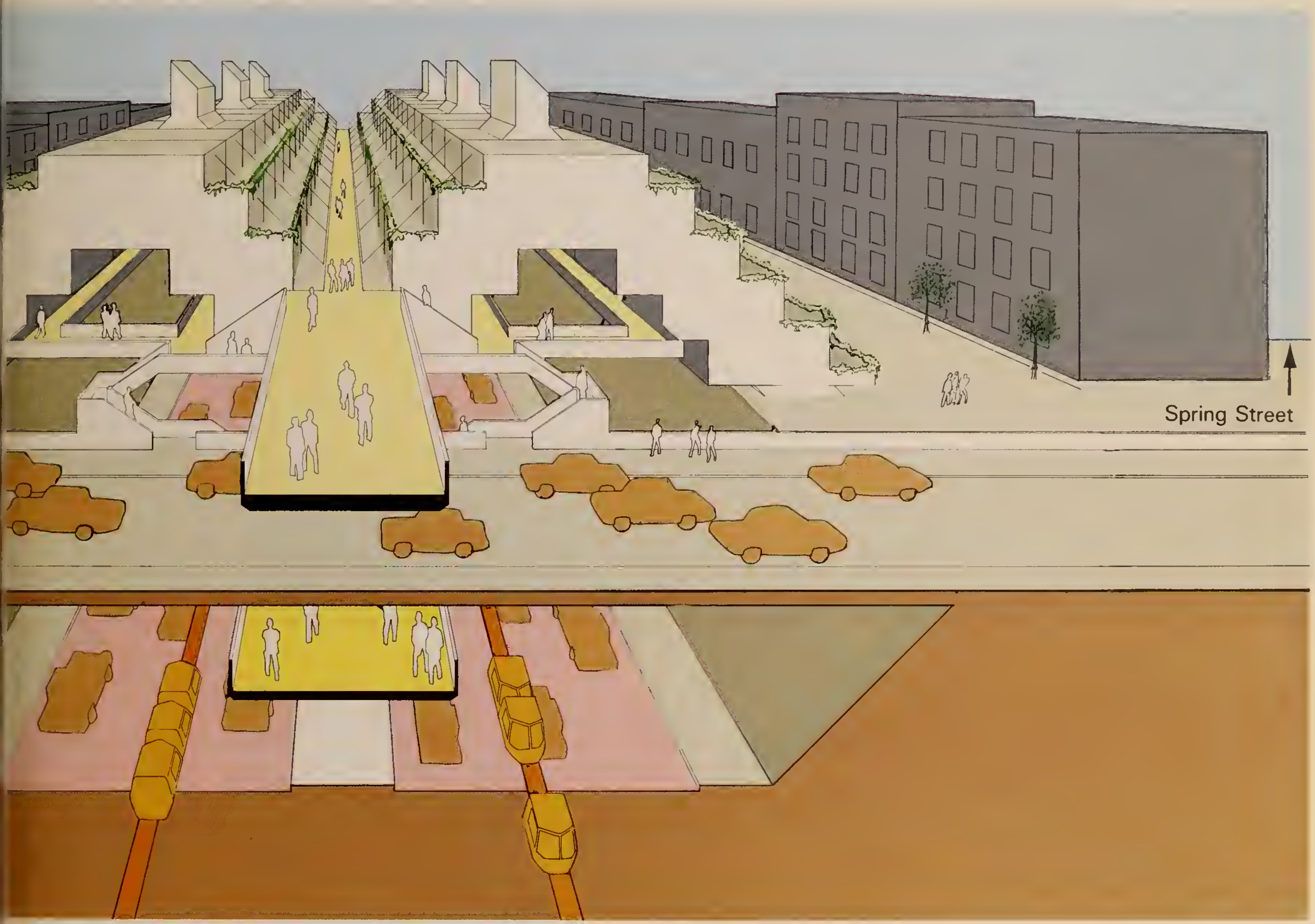
19 Proposed Broome Street Preservation Scheme



Spring Street. As a result, this ensemble of very much intact 19th-century industrial cast-iron façades is preserved. Some rear extensions might have to be removed, but in general the appealing and representative Broome Street buildings are preserved in their present condition, an achievement that eluded previous planners of an expressway route through this area.

North-south at-grade streets carried on bridges over the expressway continue to link the city. The pedestrian promenade at the center of the A-frame cross-corridor buildings crosses above existing north-south streets. From this slightly elevated pedestrian deck, stairs connect the existing sidewalk and street to the new east-west linear pedestrian way running above the expressway.

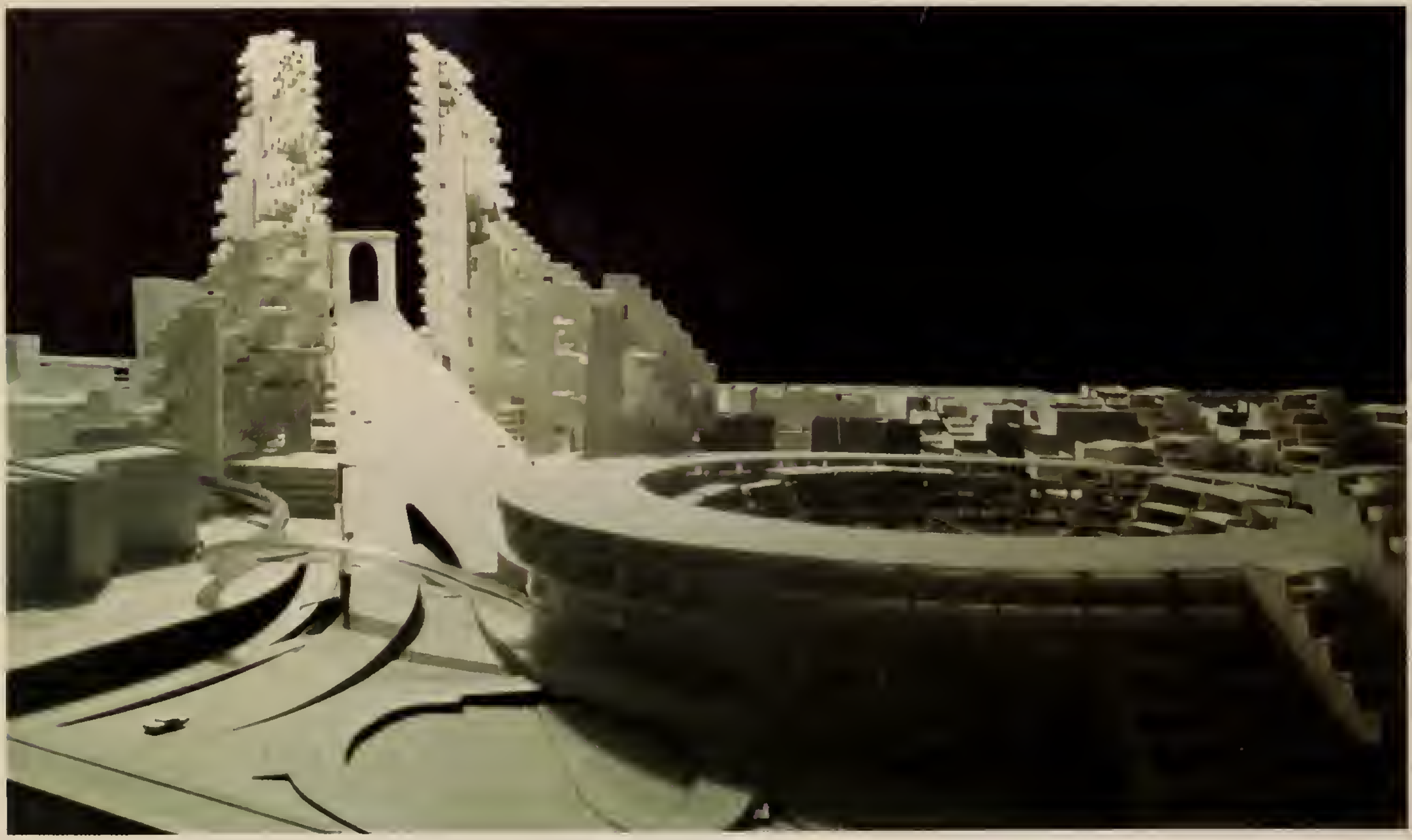
Key for Figure 19:
▨ grade street
🟥 expressway
🟧 people mover
🟨 pedestrian level



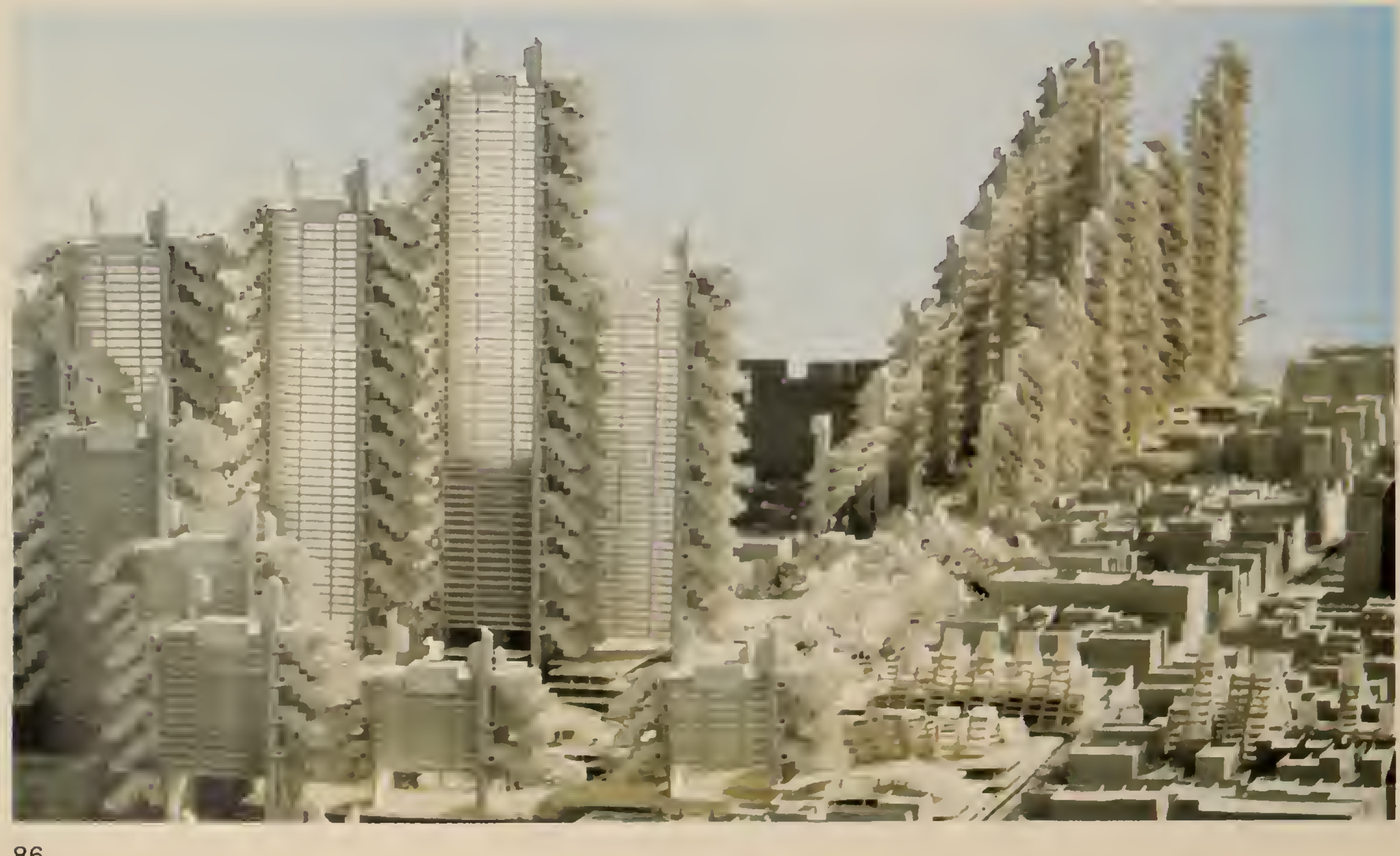
Topographic Architecture and Hierarchy of Building Types (Figures 20–22)

The scale of the buildings along the corridor varies significantly. The variety of height above grade and depth below grade is related to the uses considered appropriate for these buildings, to the character of the existing urban area around the buildings, and to the urban design intention meant to be expressed by each segment and subsegment of the corridor route. Thus, at the bridges and tunnel the idea of "gateway" is expressed in tall residential buildings with parking decks below the highway (Figure 20). These tall buildings flank the edges of the decked-over highway, creating a sense of a gateway to the island. In these locations, tall buildings also capture unusual riveredge views in an area where little other residential building exists. The doughnut-shaped turnaround near the Manhattan Bridge approach contains a school facility in the center with parking along the perimeter. The tallest buildings at the bridge entrances are some 60 stories high, cascading down to a height of about 12 stories at the inland edge of the bridge approaches, suggesting a completed entrance to the city (Figure 21).

20 Gateway, Manhattan Bridge Segment



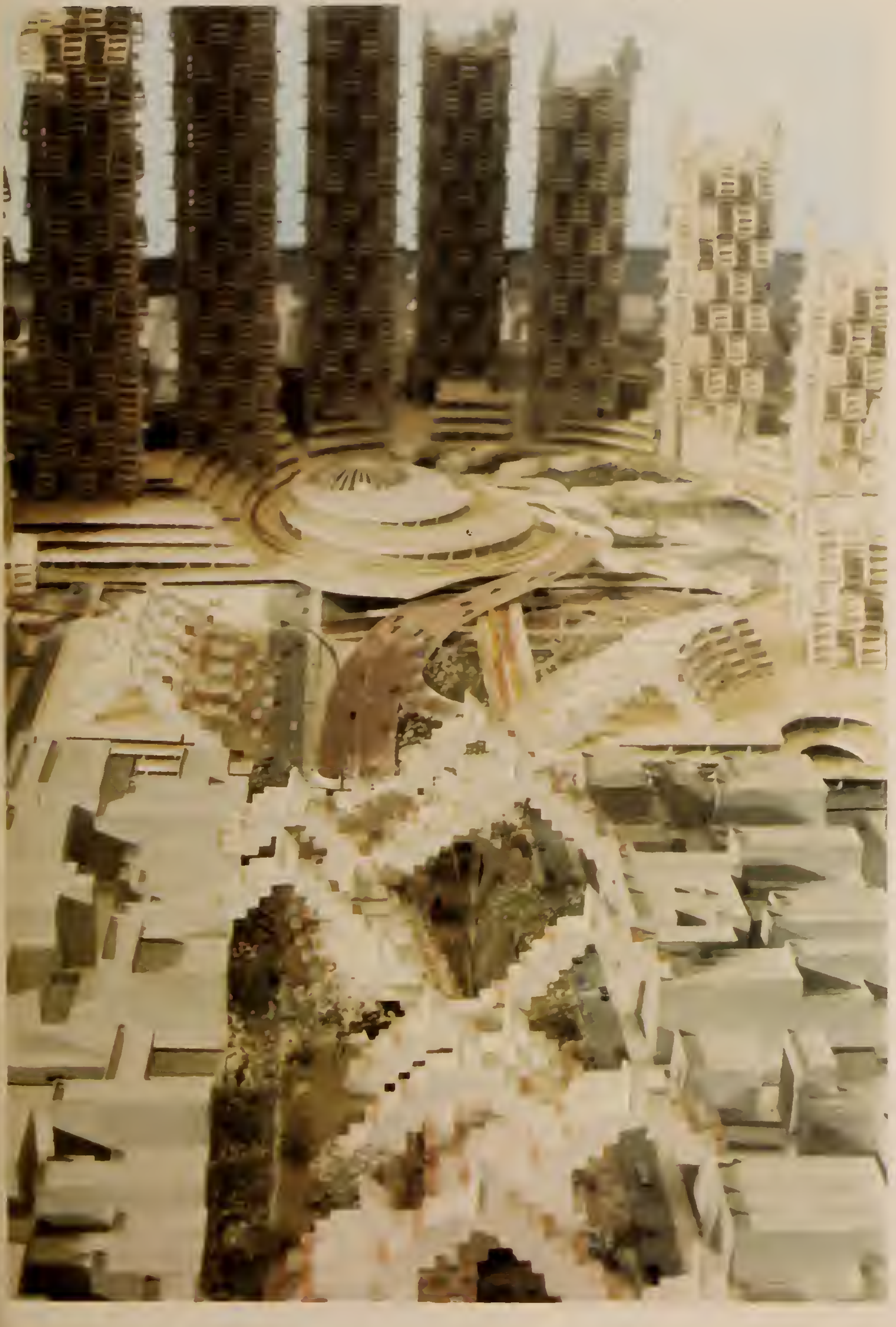
21 HUB, Gateway and Williamsburg Bridge Segment Cross-Corridor Buildings



Where the highway touches grade level inland of the bridge approaches in the eastern segments, low-scale buildings are constructed directly over the expressway in air rights (Figure 22). This same structural approach, basically dependent on the modular A-frame, dominates the western leg of the corridor in the vicinity of Broome Street when the highway is below grade street level.

At the intersection of all three highway route segments is the HUB. This district is composed of tall multipurpose buildings, to be developed in conjunction with a number of other facilities (seen from different vantage points in Figures 21–22). The buildings at the HUB are tall, to signal a special place of intense human activity and important intersection between all of the transportation systems. Dense development makes the most sense at an easily reached intersection of transportation systems. Thus, sensible planning is reinforced by an urban design expression, linking the two to create a topographic reference point in the city commensurate with the physical, social and economic importance of the particular area.

22 HUB and Manhattan Bridge Segment Cross-Corridor Buildings



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P.W.

CREDITS

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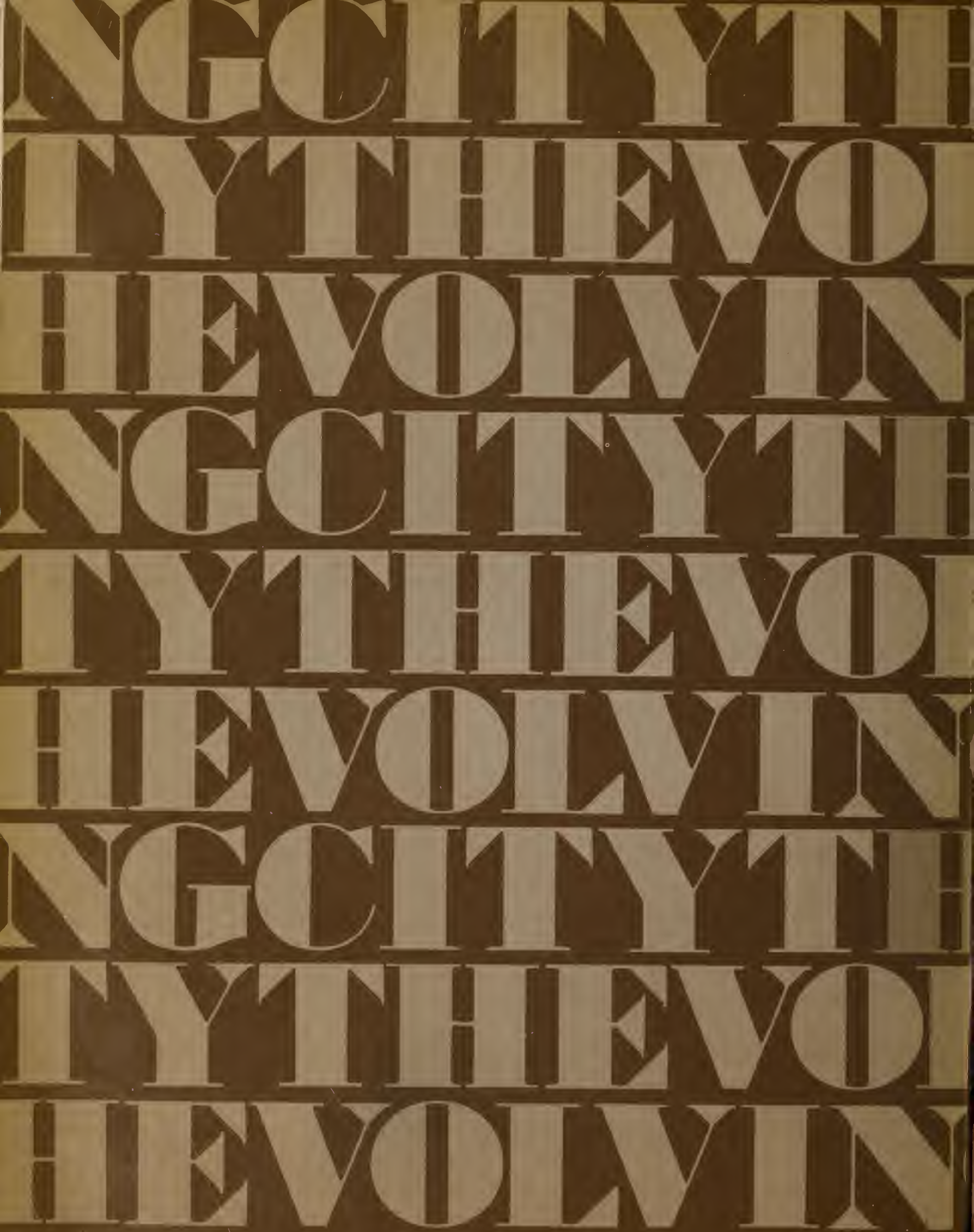
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